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CHEMICALLY PURE
HYPOPHOSPHITES

BY
R. W. GARDNER

SIXTEENTH EDITION

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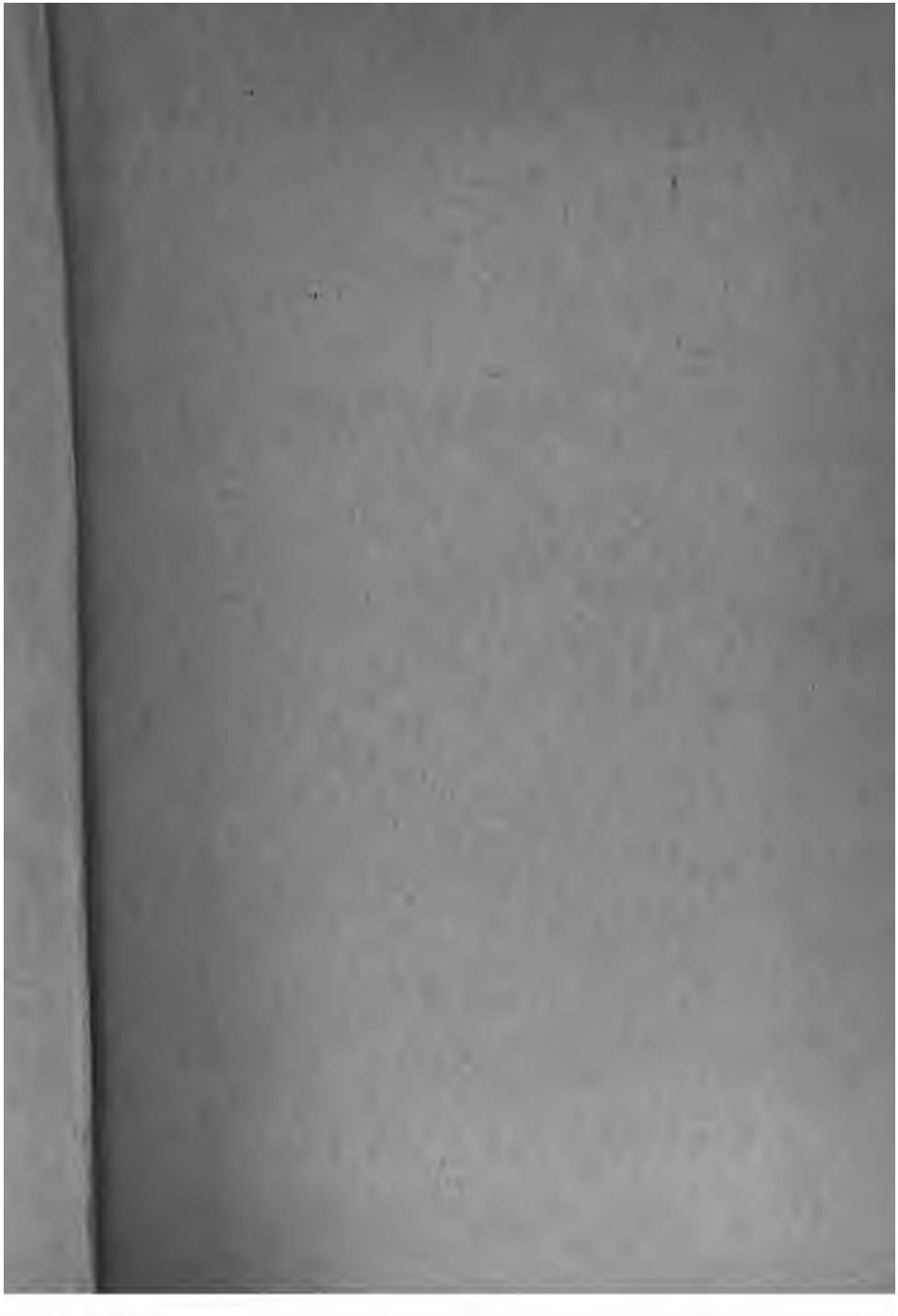

CHEMICALLY PURE

HYPOPHOSPHITES.

THERAPEUTICAL INDICATIONS

WITH

CLINICAL DATA.

EDITED BY

R. W. GARDNER, Pharmaceutical Chemist.

SIXTEENTH EDITION.

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156 WILLIAM STREET,
NEW YORK.
1899.

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PREFACE.

PHOSPHORUS.

The subject of the most available form in which to administer this important remedy has been very much discussed. It appears to the writer that the element phosphorus, ought never to be prescribed for internal medication until after it has passed the first stage of its oxidation, as during this process it has such an avidity for the oxygen that it is destructive to all tissues, injures and inflames the stomach coating, and gives off phosphoretted hydrogen in the stomach and intestines as a bi-product of its oxidation.

Phosphoretted hydrogen is an active poison, is soluble in the stomach secretions, and is, therefore, immediately taken up and absorbed.

That portion of the phosphorus not changed into phosphoretted hydrogen, combines with oxygen, obtained from whatever source by violent chemical action, until after the first atom has combined; it then unites with the aqueous secretions, being now for the first time soluble, and forms hypophosphorous acid; this, of course, unites with whatever bases may be present, and a hypophosphite is the result.

Absorption cannot take place with a solid substance.

Hence, phosphorus must become soluble before absorption can take place.

All solutions of the element phosphorus are precipitated in the stomach by its aqueous secretions in a solid form. Thus the effect of the administration of free phosphorus is to form a solution of phosphoretted hydrogen which produces toxic effects—and a solution of a hypophosphite. In the meantime great damage is done the organism by making the stomach the laboratory for the preparation of a hypophosphite, which might very much better be given already formed, as the amount of hypophosphite produced by the small dose of phosphorus tolerated is infinitesimal.

HYPOPHOSPHITES.

It is evident that these salts have not received that degree of attention by many physicians that their importance demands. An impression appears to be common that all hypophosphites act upon the organism in much the same way, and that the selection of the different hypophosphites, used singly, according to dema

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peculiarities of therapeutic action, is entirely unnecessary and a matter of little importance.

That this statement is true is proven by the fact, that the hypophosphites are so commonly prescribed in complex combination, for all purposes, in enormous doses, and apparently with no regard to the special action of each.

These details embrace many points of vital necessity to favorable results in treatment, which it is the common present practice to entirely ignore; consequently the ordinary treatment by hypophosphites results in failure. The physician becomes disgusted and discouraged at his want of success and condemns the method and the remedy and ceases to prescribe the one remedy which in careful hands, discriminately used, has resulted in the cure of thousands of cases of tuberculosis in all stages.

The pharmaceutical condition of these salts is another absolutely essential condition to success. Churchill says that no results need be expected from the use of the ordinary commercial salts, or the ordinary preparations made from them. He has laid down the necessary conditions for their preparation, and the various Syrups of the Single Hypophosphites prepared by the writer, are made to conform strictly with his recommendations.

No combinations of different hypophosphites are ever used by Dr. Churchill himself in the treatment of phthisis.

The Elixirs of the Hypophosphite Salts are put up in the same manner as the Syrups, but are not so reliable for therapeutic effect. The amount of sugar is not so great, and the protection against oxidation not so complete. They were prepared with a view to their use in cases where the sugar cloyed the stomach; but the syrups may be administered in milk, coffee, lemonade, and in such a variety of ways to overcome this difficulty, that probably no case will occur where they may not be used.

Every article in these pages by American authors, has been written with particular reference to, and after special observation of, the action of *Gardner's Preparations.*

They all refer to these preparations exclusively, and not imitations of them.

The value of the Hypophosphites as therapeutic agents, and more particularly the *great advantage of discriminating methods* in their

application, and the use of chemically pure salts, applied singly according to indications, ought to prompt to more careful observation and more frequent and painstaking reports of cases treated, for the benefit of medical science and humanity.

The special attention of the profession is requested to the description of Hypo-Quinidol (Gardner). This is a new chemical combination of Quinine with Oxidizable Phosphorus. In this preparation, the unpleasant symptoms, cinchonism and other head troubles, appear to be entirely eliminated, while the germicidal and anti-periodic properties are not only retained, but actually increased, owing to the extreme solubility of the compound. The complete argument will be found under the heading, "Hypo-Quinidol (Gardner)."

Particular attention is also asked to the new expectorant, Gardner's Syrup of Chemically Pure Hypophosphite of Ammonium.

This preparation is becoming very popular, its indications being the same as those for Ammonium Chloride, while its effects are magical in relieving paroxysms of laryngeal cough, either acute or chronic.

In conclusion, the undersigned wishes to call the attention of the profession to the fact that in a countless number of cases, where they designate "Gardner's" preparations, some other is dispensed by unprincipled druggists.

If the undersigned has succeeded in improving upon the ordinary preparations of the remedies mentioned above, and the physician wishes to avail himself of any such advantage, it is evident that these preparations must be dispensed when prescribed.

The only way to prevent this evil of substitution lies with the physician himself.

There is no other way than to designate "Gardner's" by name, and to direct the patient to such apothecaries as are known by the prescriber to be honest and reliable, and to direct all such to dispense exactly what is prescribed under pain of the prescriber's displeasure. If this method is pursued, nearly all druggists may be depended upon to dispense what is prescribed. If the druggist understands that the physician is in earnest and really insists, and that the future patronage of the prescriber depends upon a faithful adherence to his directions in this matter, he can generally be depended upon, if his character is known. But if the physician does not take this decided stand, and implies by his indecision, an absence of a firm determination that what he has prescribed shall be dispensed, it will be taken advantage of in most cases, and some other preparation will be dispensed

Respectfully,

R. W. GARDNER.

HYPOPHOSPHITES.

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INTRA-ORGANIC OXIDATION

A NECESSITY TO THE TISSUES.

It is well known that the human body is an oxidizing apparatus; all substances entering the organism, with rare if any exceptions, are, if such a change is possible, oxidized to their utmost extent before being eliminated; that the breath we draw is the source from whence we derive our supply of this indispensable element; that bodily energy is derived from the decay of living material—the oxidation of various complex substances—resulting in muscular force and heat; that life and death are so intimately connected with each other that the thoughtful mind cannot view the one without being confronted with the other, as we are continually dying while we live; a struggle between the two, with the inevitable results of victory in the end to the grim destroyer.

We will pass by the complicated actions and reactions by which katabolic and anabolic changes are produced, except in so far as oxygen has to do with them.

Without this element we should die. The importance of oxygen to the tissues is admirably illustrated in the almost instantaneous regeneration produced in the sloughing ulcer or cold abscess, when peroxide of hydrogen is brought in contact with it; the pus and putrid matter disappear as if by magic, and the surrounding tissues are so stimulated, that if brought into contact and antiseptically dressed, the parts will heal as if by first intention.

This wonderful local effect is but the expression of the great need of the entire organism for this element.

The efficacy of chlorate and permanganate of potassium, both powerful oxidizing agents in putrefactive and germ diseases, like scarlet fever, diphtheria, etc., is thus explained.

Septic matter, and the germs which accompany it, are destroyed when oxygen has full play; this is what keeps our bodies in an aseptic condition during life, and the lack of it is the cause of putrifaction after death; it is the sustainer and supporter of life, a necessity to animal existence; this is the reason we are endowed with breath.

We know the carcass of a slaughtered animal shortly undergoes putrifaction, and its incidental accompaniment, spores and microbes appear. Why? Because the circulation being cut off the tissue no longer gets its supply of this necessary element, brought from the lungs, and distributed through the organism; the blood, a fluid tissue, becomes pathologic, infective germs may then find in it a nidus for their development, while *normal blood is a germicide.*

And this brings us to a consideration of the question:

What proportion of the diseases afflicting mankind are caused by an insufficient supply, or a want of power to appropriate this vital element?

As to the supply, we may reasonably conclude that it is always sufficient inasmuch as the patient always breathes during life, and the composition of the air is such that the supply of oxygen is never absent.

If it be true that oxygen is a destroyer of septic material, its presence in normal quantity in the organism would also prevent the formation of such material, and keep the tissues free, not only from septic matter, but also from those germs which find their habitat in and depend upon diseased pabulum for their existence.

It is probable, that in cases where cell tissue is broken down, and becoming degenerate, where mal-nutrition and waste seems to be the tendency, where assimilation is inactive and vitality low, that the principal predisposing cause is that the organism is starving for oxygen, the breath of life; and if so, where shall we find the remedy, and how is it to be applied? It is a case of "water, water everywhere, and not a drop to drink."

It is stated that the proportion of carbonic acid excreted at each expiration is from three to six per cent., depending upon the length of time the air is retained in the lungs.

The elimination of this waste product, after inspiration of atmospheric oxygen, reminds one forcibly of the same reaction, oc-

curring when the solution of peroxide of hydrogen is applied to the sloughing ulcer, when, as physicians all know, there is an effervescence of carbonic acid gas, resulting from the combustion of putrid matter, leaving only water and clean tissues, the extra atom of oxygen having been expended in the reaction.

The atmospheric oxygen, in like manner, after being conveyed by the respiratory process into the animal tissues, acts upon the proximate principles therein contained, goes through a certain number of combinations, and is finally expelled in the shape of carbonic acid.

The oxygen thus absorbed combines with the proximate materials floating in the blood, and fits them for the formation of cell tissue; if deficiently oxidized in the lungs, the reaction is incomplete, the normal bioplasmic material is not produced, and a pathologic matter is substituted, which will not form healthy tissue.

But why should this condition of things be? Why does not the blood take all the oxygen required during the act of respiration?

Because, an element natural to the organism, and which is always present as an ingredient in the tissue forming material of healthy persons, and one of the offices of which is to contribute by its presence the necessary chemical affinity to this material, to take up and combine with the oxygen at the lungs, *is insufficiently supplied.*

This element is *oxidizable* phosphorus.

This will explain why, when oxygen is inhaled, in cases requiring it, that the treatment is abortive: there being a lessened affinity for oxygen, owing to the lack of oxidizable phosphorus in the organism, the oxygen cannot be utilized, and the restorative effect looked for is not realized.

This deficiency of the phosphide element has been variously accounted for; artificial methods of life, such as dissipation, sexual indulgence, want of out-door exercise, excessive mental wear, emotional and excitable temperaments, poverty and privation, unsuitable and insufficient food, etc., causing an undue waste and an insufficient supply from natural sources, of this essential requisite.

"That there is a direct connection between the excretion of the phosphates and waste of nervous element, is proved by the fact that this excretion falls to its lowest point during the cessation of nervous

activity; and that in the insane the excretion of the phosphates is considerably increased during paroxysms of excitement, while on the contrary, it falls below par during the subsequent period of exhaustion.

The consequences of the phenomenon or feeling of exhaustion do not, however, stop at the waste of the immediate available phosphide element contained in the nervous system. As this element exists in the albuminoid principles which constitute the bioplasm or histogenic stock from which all the organs and tissues of the system are formed; as there must be a balance between the proportions of this element contained in the different part of the system, we have a right to infer that its decrease in one part must, after a certain time, produce a corresponding diminution in the rest; and, as we have found that the phosphide element is probably the exciting and initiatory agent of intra-organic molecular combustion, whatever produces a waste of the oxidizable phosphorus in the system must diminish general molecular oxidation and the amount of excreted carbonic acid.

Every kind of activity, whether intellectual, emotional, locomotory, or sensual, is therefore conditioned, either directly or indirectly, by a wear of the phosphide element, as shown by the excretion of the phosphates; and whether this activity exceeds a certain limit the organism is no longer in a normal state."—*Churchill.*

It will thus be seen what an important part oxidizable phosphorus takes in the system by seizing and storing oxygen for economic use; but its utility does not stop here; it is a direct stimulant and tonic to the nervous system, irrespective of its use in attracting oxygen; the fact that it is found in largest proportion in the grey matter of the brain, the throne of nervous power, would of itself be sufficient reason for the belief that it is an element of vital necessity.

It can hardly be looked upon in any other light than as a necessary food supply, for it is an element in various foods of animal origin.

It is particularly present in milk, that remarkable secretion upon which infant life is almost exclusively dependent during its earliest period, and during which time there is wonderful progress in development, and the greatest need for all necessary elements to sustain rapid growth.

This phosphide element (oxidizable phosphorus) must not be confounded with the phosphate; phosphates are burned out ashes, so to

speak, in which the phosphorus has already combined with oxygen to saturation; it is therefore useless as an oxygen carrier, and useless as a means of promoting metamorphosis, as the compound leaves the body as it enters it, without change; it is a component of fully developed, and consequently, stationary histological elements, and is taken as such into the system, like other permanent salts, such as the carbonates, chlorides, etc.

The phosphorus in the Hypophosphite is combined with one atom of oxygen only, while the phosphate has already combined with five atoms; so that in the phosphate the whole of the phosphorus is already oxidized, while in the Hypophosphite four-fifths of the phosphorus is still in a combustible or oxidizable condition.

In the treatment of disease by Hypophosphites the object sought is chiefly and primarily the assimilation of oxidizable phosphorus (the electro-positive element of the salt).

This object is accomplished as well and as thoroughly by the exhibition of a single Hypophosphite as by the use of half a dozen; because when several are combined the dose is divided among the number used, and the aggregate quantity of oxidizable phosphorus contained in a dose of the mixture is no greater than the quantity contained in a dose of a single salt.

Thus the main object for which the Hypophosphites are given is accomplished as well by the use of a single salt as by a mixture of several.

It is being more and more acknowledged by the profession at large, that truly scientific treatment points in the exhibition of drugs to the use of such remedies only as are indicated by the condition of the patient.

Medicines given when not indicated are unnecessary, and cannot fail to do injury, because all medication is productive of some kind of action in the system, and if this action is not favorable it must be unfavorable, and consequently embarrasses and complicates the situation, adding new troubles to those already present.

This reasoning applies with peculiar force, in the use of the Hypophosphites, particularly in the treatment of phthisis, when vitality is low; the circulation is feeble, the patient is weak and emaciated; there is a fierce conflict going on in the organism, in the

struggle for life against the elements of death which have already become located in the tuberculous lung, and by absorption have poisoned the circulation in the production of septicæmia.

The blood vessels are thin and liable to rupture because their substance has been appropriated, and owing to defective assimilative action have been deprived of their customary nutrition.

Surely, the patient has already enough to battle against, without additional unnecessary complications.

Now the whole trouble and objection to the use of combinations, lies in the effects of the electro-negative elements. which produce secondary and complicating difficulties.

Dr. Churchill has found that gastric troubles, such as indigestion, flatulence, diarrhœa, are a frequent consequence of the use of, as he terms it, "A jumble of different Hypophosphites and strychnia."

The danger attending the use of iron in phthisis is the production of hæmorrhage. Churchill says: "Not only was hæmorrhage produced in almost every instance in which I used the Hypophosphite of Iron, but in patients who have been previously taking ferruginous medicines, it will be found that it is very difficult at first to keep the effects of the Hypophosphites within the limits of their physiogenic action."

Potassium is a powerful resolvent of condensed and consolidated lung tissue, causing softening of tubercular matter with a rapidity that may be dangerous and alarming.

The depressing action of potassium is also well exemplified in the observed effects of iodide of potassium, which as physicians know produces prostration, indigestion, loss of appetite, etc., which is solely due to the *base*, potassium.

Manganese is similar in its action to iron, and produces similar results, though not quite to the same extent.

Lime and soda, the Hypophosphites of these bases, while acting similarly in some respects, possess marked differences in action in others, which very often prevent their favorable action when combined.

Hypophosphite of lime frequently checks expectoration too rapidly, resulting in increased cough; it also is more apt to produce the pathogenic effects of the Hypophosphites than the soda salt;

thus the lime, in combination, might be doing a positive injury to the patient, which would have been wholly avoided if the soda were given alone; on the other hand, when the expectoration is too profuse, the soda should be replaced by the lime salt; this will be sufficient to show that there are many instances when both salts, in combination, are contra-indicated, and will convince the careful physician of the desirability of discriminating according to symptoms, using them singly or alternately as circumstances require, particularly when no advantage is to be gained by combination, and much may be secured in definite results by using them singly or in alternation.

Statements that Dr. Churchill uses the salts of lime and soda in combination, and recommends them thus combined, are false, and misrepresent his views and practice, as every physician knows who has read his works.

The pathological effects of over-dosing are disastrous. By increasing too suddenly the force of the circulation, without giving time for increased nourishment and strength to the texture of the weakened and impoverished blood vessels, the tissues of which have been appropriated by the urgent need of the general system, as from lack of proper assimilation of food, the patient has been living upon his own tissue—a hæmorrhage ensues. The crisis is referable directly to the sudden and over stimulation of the circulatory system, beyond the capacity of the the blood vessels to resist. Another result of over-dosing is a too active disintegration of the tubercular deposit, causing a crisis by sloughing. This process, which is therapeutically desirable, must not go on too fast, beyond the strength of the patient to bear. Time is a necessary and indispensable element in the recuperative process. It must not be forgotten that all the functions must improve together, for which time is necessary, as new tissues must form and metamorphosis must take place, and morbid and prurient matter must be eliminated; hence care should be taken to go slow, constantly watching for pathogenic phenomena, never running risks because the patient shows, at first, brilliant results by large doses, for he will soon cross the line upon dangerous ground, and the sudden relapse will remove him from the crest of the wave that seemed bearing him on to victory, to the dark valley of the shadow of death.

While the smallest doses should, therefore, be administered at first, and gradually and watchfully increased as the patient is found to bear them without showing signs of pathological effects, the limit or maximum quantity to exhibit during twenty-four hours should not exceed *seven grains*, and in many cases, especially when the disease is far advanced, this quantity will be found too great. In fact it is unsafe to give *alkaline* Hypophosphites at all, in treating *extremely advanced cases*, the Hypophosphite of Quinine being far preferable in the initial treatment of those in this condition, until it is found practical to use either the lime or soda salt, according to indications, in, at first, very small doses.

It being borne in mind that the main object sought in using Hypophosphites is to assimilate oxidizable phosphorus (the electro-positive element of the salt), and that this object may be obtained by the administration of any one of these salts, as well, as if a combination of several were used, it becomes a matter of great importance to investigate the effects upon the patient of the several electro-negative bodies, that we may eliminate all those which are found to produce unfavorable effects, and to confine our use to such only as will best agree with the patient. Dr. Churchill has paid great attention to this point, and he has found it inadvisable and dangerous to use Iron, Potassa, Manganese, or, in fact, any others than Lime, Soda or Quinine. He never prescribes combinations, even of these, but uses that one found to best meet the indications of each particular case in accordance with the symptoms of the patient, or the effects produced by the remedy, varying the dose as circumstances require.

In Phthisis, *complications* must of course be treated by appropriate remedies, but during such treatment the use of the Hypophosphite should be suspended. Unless during such crisis, no other medicine should be given, reliance being placed entirely upon the Hypophosphites to relieve cough, night sweats, etc. Narcotics and stimulants should not be used if the Hypophosphite treatment is adopted, as they prevent the proper effect of the remedy, and lower the vital condition of the patient in the end, though they may apparently lessen some of the urgent symptoms. Neither should Cod Liver Oil be used for similar reasons.

The routine treatment of pulmonary phthisis as practiced to-day, cod liver oil, whiskey, morphia to afford sleep and allay cough, atropia for night sweats, expectorants as required, creosote, guaiacol, and Compound Syrup of Hypophosphites, is well known.

The results of this treatment are readily summed up; under the most favorable conditions, the patient's life is simply prolonged for a short time; no curative effect is produced other than the usual one per cent. which recover spontaneously with no treatment, and the end is inevitable.

The multitude of new experiments which have from time to time been tried, have all proven failures. As for the Compound Syrup of the Hypophosphites, any scientific medical man should realize at once, why it must, not only prove a failure, but produce actual injury to the patient. Ordinarily medicines are given according to indications for them. What disease, or complication of diseases, ever required such a complexity as lime, soda, iron, potassium, manganese, quinia and strychnia at one dose, and cod liver oil, whiskey, morphia, atropia, expectorant mixtures, creosote, guaiacol, etc., p. r. n. ? When it is considered that the eminent physician who was the first to apply the Hypophosphites in medicine, and who has expended a long life in scientific investigation of this treatment in phthisis, says, that not only must no other medicines be administered with the Hypophosphites, but that even these must be used, one salt at a time, according to special indications; who has demonstrated that among the multitude of these salts, none act favorably except those of lime, soda and quinia; that the doses of these must vary in almost every individual case, and must be modified according to symptoms produced as the treatment progresses, is it any wonder that no favorable results are obtained from the ordinary treatment?

Another absolutely indispensable requisite is habitually overlooked, the hypophosphite used must be prepared strictly according to the conditions found necessary by Dr. Churchill for successful results. Apothecaries almost invariably dispense syrups made from the ordinary commercial salts, from which, Churchill states, no favorable results can be anticipated. An average of, at least sixty per cent. of cases in all stages, recover under this treatment, when all details are strictly followed. This statement is proven by clinical histories con-

tained in this volume. Not one physician in a hundred will properly investigate the requirements of this treatment, or having done so, will strictly carry them out; this is why they fail.

Forty-five cases recovered in the practice of one physician, T. Blank, M. D., St. Louis, Mo., all treated from June, 1893, to Feb. 1897. The diagnosis of each case was verified by the detection of the tubercle bacillus under the microscope at the beginning of the treatment. See Dr. Blank's paper on p. 138.

In a number of instances physicians have written, complaining that their patients were not progressing well under the treatment and it was found that they were using morphine to procure rest at night and to allay cough. Upon discontinuing this, the patients suffered more for a day or so, but afterwards improved right along and made good recoveries.

Other instances have occurred where the dose was too large and the patients not only failed to improve but were actually suffering relapse, when the dose was discontinued for a few days and then resumed in much smaller quantity with the happiest results.

If the patient is not progressing, be assured there is a reason for it, and, generally, one that can be controlled. Do not blame the remedy when the fault is because of its inconsiderate use. Either the wrong salt is being administered; or, what is worse, a combination containing contra-indicated salts; or some other remedy is being used which prevents the favorable action of the Hypophosphite; or the dose is too large; or the patient is suffering from a complication which interdicts the use of the Hypophosphite for the time being; or the Hypophosphite is impure, and consequently *unable to produce favorable results.*

Purity a Necessity.—All authorities are now practically unanimous in the conclusion that to produce the therapeutic effect with the Hypophosphites, it is necessary that they should be chemically pure.

It must be remembered, that if these salts are carefully prepared in this condition, but kept in the saline state, they rapidly deteriorate and become impure; that they cannot be kept, as salts, and remain fit for medicinal use.

It is necessary, that as soon as they are prepared, they should be protected by sugar, in the form of syrup, from atmospheric oxidation.

This is why Churchill insists upon the use of syrups containing chemically pure Hypophosphites; and why the writer in carrying out his views, prepares these salts only in the form of syrups, and also why they are only put up in small bulk, as a small quantity is exposed, in use, less to the air than a large quantity, and is very much more likely to retain its medicinal value, than if exposed in large bulk to constant new accessions of air while in use.

It seems to have become a favorite remark with some manufacturers that their preparations are made with a "slight alkaline reaction" as though this was a very important advantage, when, in fact, it is an open confession of impurity. With a little more chemical knowledge it would be seen that "alkaline reaction" means the presence of "free alkali" or its "carbonate," which, not being a Hypophosphite, is manifestly an impurity, as the Hypophosphites of the alkaline bases, when pure, have a *neutral* reaction. Churchill claims that the presence of these impurities renders them next to useless by preventing their favorable physiological action. He cites instances. Having obtained the favorable action of the pure Hypophosphites in several cases of Phthisis, he purposely added an alkaline carbonate when his patients at once began to lose ground, which continued while the impure salt was used. When, however, they were put upon the pure salt again, they improved as before. The experiment was tried again and again, until the cause of retrogression was fully demonstrated. Again, if the combination contains Hypophosphite of Iron, the presence of free alkali will cause its precipitation.

Indications, in Other Conditions than Phthisis.—Hypophosphite of Iron is indicated in Anæmia, Chlorosis and Dysmenorrhœa. Hypophosphite of Potassium is recommended in Asthma. Hypophosphite of Quinia as a general nervous tonic and in Intermittent Fever. Both the Hypophosphite of Lime and the Soda Salt are indicated in disease characterized by insufficient nutrition, as marasmus, and in convalescence from wasting disease of any kind, where the vitality is low, assimilation of food defective, blood depraved, and functional activity impaired.

The combination of the Lime, Soda, Iron and Potassa Salts has been found very effective in obstinate Bronchial coughs, and in the impoverished condition which precedes and accompanies boils, abcesses, carbuncles, etc., in non-tubercular cases.

Hypophosphite of Manganese is similar in its action to that of the Iron Salt, but is much less energetic. It has a special excitatory action upon the biliary secretion, and it has been found peculiarly useful, either alone or in conjunction with Hypophosphite of Quinine, in hepatic derangement, with deficient biliary secretion, subsequent

upon prolonged residence in tropical climates, as also in cases of Anæmia and general debility depending upon the same cause.

Hypophosphite of Ammonium resembles the Potassium Salt in its general therapeutic action. It has been used by Churchill with great advantage in hepatic derangement, owing to its special stimulating effect upon the liver.

It is, however, contra-indicated in Phthisis, for the same reasons which forbid the Potassium Salt, and probably for the additional one that the Ammonium compounds all excite the circulatory system, which renders them dangerous in hemorrhagic states. The same writer considers this salt far superior to the muriate or carbonate as a laryngeal stimulant. As an expectorant, it is peculiarly active.

It should be remarked that in diseases uncomplicated with pulmonary difficulty, not only may the dose be larger, but various combinations may be prescribed, and the remedy continued with less necessity of watching the patient, the pathological effects of these remedies being far less liable to be produced than in cases of Phthisis, in which disease the susceptibility of the patient to their action is greatly increased by the diathetic state.

Children of tuberculous parents who have inherited the diathesis, are wonderfully improved by the hypophosphite. (See case mentioned by Dr. J. R. Fraker, Marlboro, N. Y., page 113. Also Dr. Wrightson's case, page 127.)

To those of the profession who, having previously tried the Hypophosphites without success, and who have consequently given up their use, the evidence of Dr. S. T. Lowrie, Lore City, Ohio, will be of interest. (See his letter, page 114.)

Dr. William Porter, of St. Louis, Mo., gives some very convincing facts, drawn from his personal experience, as to the great advantage derived from the use of these single, chemically pure salts over the various commercial salts in combination in tuberculosis. (See his paper, reproduced on page 114.)

The late lamented Dr. W. F. Hutchinson's opinions on the Hypophosphites in nervous diseases, a specialty in which he was an acknowledged expert, will be found in his paper (page 119).

For a remarkable effect of the Hypophosphite of Lime in its influence in cases of difficult and retarded dentition in children, see note from Dr. C. C. Stephenson, Little Rock, Ark. (page 120).

In a case of syphilitic tumor, after treating the case specifically until the tumor was absorbed, it was found that the lesion had produced loss of memory and power of co-ordination. The treatment at this stage of the disease by Hypophosphite of Lime at first, and subsequently with Hypophosphite of Manganese, with still more marked results, furnishes a remarkable illustration of the restorative power of these remedies in brain lesions. The case was reported by Lewis G. Pedigo, A. M., M. D., Crockett Springs, Va. (Page 120.)

In the same paper Dr. Pedigo pays a high tribute to the efficacy of Syrup Hypophosphite of Lime in the sub-acute and chronic inflammations occurring in the bony and periosteal tissues of scrofulous or badly nourished patients, as a result of a blow or injury, which usually result in hip-joint, Pott's disease, or some other grave lesion of this character. He gives the history of a case of this kind, with complete recovery, where from the unfavorable constitutional state and family history of the patient, the prognosis was bad.

As reconstructives in cases of defective nutrition, loss of mental and physical vigor, nervous prostration, etc., there is probably no equal to the Hypophosphites, provided the properly indicated salt is used. This is very important. Dr. Boum, of Providence, R. I., contributes a valuable paper upon this view of their action (page 123).

Q. C. Smith, M. D., Austin, Texas, publishes the result of his experience in the use of these syrups in cases of delicate and weakly children. (Page 126.)

Abundant evidence, corroborating the conclusions of Dr. Churchill, as to the curative effects of the Hypophosphites in phthisis, is at hand.

But this favorable result, it must be borne in mind, will not be reached, unless certain well-known methods are followed, which are fully explained in this brochure in the various quotations from Churchill, De Brémon, J. C. Thorowgood, and other eminent authorities.

The fact is that the methods of Churchill are so very different from the usual ones employed by the profession in the treatment of this disease, and differ so materially from those at present advocated and followed by the majority of medical men that the first thought of a physician is to rebel against its arbitrary ruling concerning the

use of cod liver oil, stimulants, narcotics, etc. Now, if the methods in use had been found to be efficacious, and a considerable number had been found to recover under treatment, there would be good reason to cling to it. But physicians know that the contrary is the fact, and are obliged to acknowledge that the disease is practically incurable, except about one per cent. of the cases, which cure themselves. If this is so, why not adopt a treatment, which in other hands has proven its superiority? *This fact is proven by cases reported in this pamphlet.*

I would again remind the reader just here, however, that the *details of methods* enumerated by Dr. Churchill, *must all be followed* or *disappointment will result.* A physician cannot say that he has followed Churchill's suggestions unless he has been willing to study and become familiar with them in their entirety and strictly carried them out. To facilitate this and make it easier to grasp most of the methods quickly, I have summarized the general plan under thirty heads. It will be found on page 26 of this pamphlet.

This table, however, does not comprise the whole by any means, but lays down a large number of recommendations, which will assist the prescriber who wishes to test Churchill's methods; the balance can only be obtained by a study of his writings, very much of which is quoted herein, (pages 37 to 94); and also the matter written by the late L. de Brémon, M. D., who was intimately associated with Dr. Churchill for many years as his clinical assistant, and who reports an experience in New York and vicinity of more than 150 cases treated.

A case of a girl 16 years old with inherited phthisis, when the family, father and four children, (the father dying at 35, and the four children all died before reaching 17 years of age), had been swept away with the disease, is given by Dr. J. T. Wrightson, Newark, N. J. This child was completely cured, was married, and now has a family (page 127).

See also case of tuberculosis reported by Dr. A. Ostertag, St. Louis, Mo. (page 127).

Joseph M. Patton, M. D., Professor of Internal Medicine, Chicago Polyclinic, in a valuable and instructive address before the Chicago Medical Society, says:

"In my own practice, both public and private, I have for a num-

ber of years past treated cases (of phthisis) with Hypophosphites in the form of a syrup of whichever salt was indicated; I prefer Gardner's syrups as being the most stable on the market. This must not be confounded with the combined Hypophosphites. The latter preparations I used for several years in a large number of cases, and became finally convinced of the truth of Churchill's teachings, that the compound syrups of the Hypophosphites *is distinctly injurious* to phthisical patients. The Hypophosphite of Soda is generally the most useful, and is given in apyretic cases where there is not much expectoration.

The quinia salt is used temporarily when the temperature is over 100° F., and the lime salt where there is too free expectoration, six or seven grains daily being the maximum dose." (Page 127.)

For reports of additional cases of phthisis cured by Hypophosphites, the reader is referred to papers of the following physicians, republished herein.

(Three cases in the first, second and third stages, selected at random, to illustrate his method, by the late L. de Bremon, M. D., page 106.) History of twelve cases of Phthisis Pulmonalis, treated by Syrups of Hypophosphites, eight recoveries, four deaths, by W. H. Bentley, M. D., Cold Spring, Woodstock P. O., Ky. (page 109); J. R. Fraker, M. D., Marlboro, N. Y. (page 113); Malcolm Graham, M. D., Jonesville, Mich. (page 116); J. C. Willson, M. D., Morley, N. Y. (page 117); P. J. Bailey, M. D., Dawson, Ky. (page 118); Walter M. Darnell, M. D., Belton, Texas, (page 118).

Richitis.—The *Clinical Record* is full of instances of cure of this condition by Hypophosphite of Lime. A. Springer, M. D., Lewiston, Me., gives experience at the "Home" for sick and needy children at that place. (Page 131.)

SUMMARY OF CHURCHILL'S METHODS IN PHTHISIS.

1. The Hypophosphites of Soda, Lime and Quinia are the *only ones indicated.*
2. The Hypophosphite must be *chemically pure.*
3. They must *not be combined* for use in phthisis.

   Why not? Because they act in antagonism to each other, the different bases being indicated in *different* stages of the disease and the several salts differing in therapeutic action.

   Churchill *never uses them in combination.*

   All statements that he did or does are false and misleading.

The proofs of the above are in *this pamphlet.*

4. The Hypophosphite should be used only in the form of *syrup.*
   Why? Because as salts they will not keep in the proper condition, the protective action of the sugar being necessary to prevent *atmospheric oxidation.*
5. The pure Hypophosphites are *neutral* not *alkaline.*
6. Soda is indicated in the *incipient* stage, as a rule, with *exceptions.*
7. Lime is indicated in the *second* and *third* stages, as a rule, with *exceptions.*
8. Hypophosphite of Quinia is indicated in the *initial* treatment of *far advanced* cases, to be followed by the Hypophosphite of Lime, or Soda, later on, when it can be borne.
9. Lime *reduces* expectoration, frequently causing cough; the soda should then be used.
10. Soda mildly *favors* expectoration; if too free, the lime should be substituted.
11. The tendency of the Hypophosphite is to create *plethora.*
12. While this condition is necessary to the cure, it favors hemorrhage.
13. Discriminating dosage is therefore necessary.
14. *Any* Hypophosphite given too freely will produce pathogenic or toxic effects, such as a too rapid softening and expectoration of the tubercular deposit, lassitude, prostration, headache, giddiness, fever, indigestion, loss of appetite, colic or diarrhœa, epistaxis and hæmoptysis.
    These effects are produced more readily by some salts than by others.
    Of those used in phthisis, viz., lime, soda and quinia, the lime is the most apt to be productive of these undesirable results.
15. If weak and emaciated, or if the case be well advanced, let the commencing dose be very small, *even one grain* in twenty-four hours in some cases, and, if well borne, gradually increase, keeping well within the physiological effect.
16. The *maximum* quantity to exhibit in phthisis, during twenty-four hours, is *seven grains.*
17. Do not give *any other drug* with a Hypophosphite.

18. Lay aside the Hypophosphite when combating complications.

19. Cod liver oil is *contra-indicated* in any stage of the disease.

Why? Because it produces plethora; the Hypophosphite also produces plethora; when used together, such a plethoric state is produced that, to avoid hemorrhage, the Hypophosphite must be discontinued; the Hypophosphites, being the remedy for the diathetic state, must be continued, or the treatment is useless.

20. All stimulants are *contra-indicated.*

Why? They prevent the return of strength and bring on a recurrence or an aggravation of cough, fever and sleeplessness. As their effect upon the system consists in a stimulation of the circulation and a diminution of oxidation, it is directly *contrary* to that of the Hypophosphites.

21. You should usually get results within *two weeks.*

22. If not, look for the *cause.*

It will, generally, be found to be one of the following:

The Hypophosphite is *impure* and incapable of producing proper results.

You are producing pathogenic effects by *overdosing.*

You are using *stimulants,* which prevent the action of the Hypophosphite.

You are giving *anodynes* or *other drugs* to allay cough, procure sleep or control night-sweats.

You are using contra-indicated Hypophosphites, or combinations of them, the bases of which are therapeutically antagonistic, or produce pathogenic effects.

You are giving *cod liver oil* along with the Hypophosphite.

A complication has arisen which requires special treatment.

The disease is so far advanced as to be hopeless.

23. Continue the treatment within physiogenic limits, intermitting every third week, until the diathesis is removed, and then use occasionally as prophylactic.

24. Gardner's Syrup of Hypophosphite of Lime, and Syrup of Hypophosphite of Soda, each contain twenty grains of the chem-

ically pure salt to the ounce. Each teaspoonful, therefore, represents two and one-half grains.

This quantity three times a day is the *largest amount* that should ever be prescribed in phthisis.

The average dose, in this disease, is *much less.*

The physiological dose will *vary* with *every case,* and must be carefully sought and the patient frequently observed, lest the remedy produce pathogenic effects.

The syrup may be given in milk, coffee, water, or in a little lemonade, if it is found to be more acceptable to the patient.

25 Gardner's Elixir of the Hypophosphite of Quinia contains eight grains of the chemically pure salt in one ounce.

26. Night-sweats will yield, in time, to the Hypophosphite *alone.*

27. Complications must be treated as they arise, discontinuing the Hypophosphite in the meantime, but resuming it again when acute symptoms have subsided.

28. In case pathogenic symptoms are accidentally produced, at once discontinue the Hypophosphite, and take it up again after ten days or two weeks, in smaller quantity.

29. Much further information is contained in the body of this pamphlet. *It will pay you to read it carefully.*

30. Physicians desiring to test this treatment will please bear in mind that the chemical purity of the salts is an absolute necessity for success; that they must be specially prepared and immediately protected in syrup to preserve them in a proper condition for medicinal use; that some unprincipled druggists do not hesitate to *substitute* preparations made by themselves or bought in bulk in the market, even when a particular manufacture is stipulated by the physician on his prescription. Obviously, then, the treatment has *not been properly tested,* unless the *paramount condition of purity* has been observed.

GARDNER'S SYRUP OF CHEMICALLY PURE HYPOPHOSPHITE OF AMMONIUM.

A NEW REMEDY FOR INFLAMMATIONS OF MUCOUS MEMBRANES OF THE RESPIRATORY TRACT.

Hypophosphite of Ammonium has not been much prescribed, and when it has been used, the ordinary commercial salt has been dispensed, consequently the remarkable efficacy of Chemically Pure Hypophosphite of Ammonium in certain affections, is not properly appreciated.

It possesses peculiar activity as an expectorant, and is far superior to the chloride or carbonate of ammonium as a laryngeal and faucial stimulant.

It affords almost instant relief in inflammation of the mucous membranes in all cases, whether acute or chronic, its soothing effect being noticed by the patient frequently within ten minutes after it has been taken.

Indicated in laryngitis, pharyngitis, coryza, catarrh, bronchitis, asthma, hoarseness (particularly that incident to clergymen, public speakers and singers), ordinary coughs and colds, etc.

This Syrup is expectorant, alterative and resolvent.

Stimulates the hepatic function.

Indications the same as for ammonium chloride, but is more active.

Hypophosphite of Ammonium is contra-indicated in phthisis. Its special eliminative action hastens the progress of the disease by over-stimulation.

This Syrup is prepared by the writer with the same close attention to indispensable details followed in the preparation of his other Special Hypophosphite Syrups, and which have rendered them so reliable and popular among the most careful, critical and successful prescribers.

In less than thirty days after Gardner's Syrup of Chemically Pure Hypophosphite of Ammonium was made known to the medical profession (December 24, 1897), there was such a "Scramble" to make imitations of it by the trade, that the crude material for its preparation was exhausted in the New York market.

After twenty years of experience, the writer is convinced that physicians largely fail to procure "Gardner's Special Preparations," even if specified.

All preparations made by the writer have had a legitimate reason for their introduction in the fact that they represented an *improvement* upon remedies hitherto employed in the same special field.

They are therefore in the interest of more *advanced therapeutics.*

It would seem that this is so laudable an endeavor, that the profession would appreciate it by not only designating such originator's products, but forbid the substitution of worthless imitations by unscrupulous dispensers, in their own interests and those of their patients, as well as for the advancement of medical science.

The writer has received very many appreciative letters from members of the profession, noting the prompt, almost magical relief obtained from the use of this Syrup in laryngitis both acute and chronic, in old, obstinate coughs which have not yielded to other medication, in obstinate hoarseness and loss of voice, and in bronchial and nasal catarrh. In cases of fresh "colds" it is a source of great relief, breaking up the false membrane, liquefying the secretions, promoting expectoration, relieving congestion, and opening the air passages.

PHOSPHAMOL THROAT TABLETS.

An entirely new and efficacious remedy for laryngitis, pharyngitis, bronchitis, hoarseness (particularly that of public speakers and singers), asthma, coughs and colds, or any irritation of the mucous membranes of the respiratory tract, acute or chronic. The active eliminative action of these tablets is such that they are contra-indicated in phthisis; while they are equally serviceable in relieving the paroxysms of coughing, their continued use would cause a too rapid expectoration, and a sloughing of the tubercular deposit. Phthisical cases are the only ones where they may be considered as contra-indicated. Each tablet contains one grain of Chemically Pure Hypophosphite of Ammonium in combination with soothing and demulcent adjuvants only; they contain no sedatives, narcotics, no alkaloids of opium—in fact nothing which by continued use can prove injurious. They are designed as a medicinal remedy—not a confection—hence

should be used only according to the directions, or as the physician may prescribe.

The name—Phosphamol Throat Tablets—has been adopted to prevent substitution by the trade, which has become such an evil that every manufacturer is compelled in self defence to protect himself. Hence they should be prescribed invariably as "Phosphamol Throat Tablets." The medical profession are alone made aware of their composition.

Every tablet has the letters "P. T. T." stamped upon it; unless so stamped they are imitations.

DIRECTIONS.—One tablet every quarter-hour, half-hour, or hour, as occasion may require, or as the attending physician may direct.

They are put up in convenient, compact form, in small boxes adapted to the vest pocket, and afford an admirable means of administering this very valuable remedy in such form as to be always available when needed.

QUININE

This indispensable remedy, which has grown upon the affections of the profession to such an extent that it would seem hardly possible to do without it, has, nevertheless, an unfavorable side. It has been demonstrated, not only at the bedside of the patient, but by scientific microscopical examinations of the blood, that while it is the most useful of all drugs in the treatment of malarial affections, it rapidly produces pathologic changes in the blood. It interrupts and retards the process of oxygenation, checks metabolism, interferes with the functions of the leucocytes, paralyzing them, thus checking emigration, and reduces the number of visible leucocytes under the microscope to one-fourth, when administered in large doses.

These undesirable effects, added to the already impoverished condition of the blood from microbic infection, become a matter of serious import, and render it very desirable, if possible, to utilize all the favorable action of quinine, and to eliminate all that is unfavorable.

If we examine the latter carefully, it will be seen that it is exerted in a general direction unfavorable to the function of hæmatosis and oxygenation of the organism.

Now, this is undoubtedly a constant tendency of all the forms of quinine ordinarily administered, and can only be modified or controlled by a combination with some agent which will exert a contrary action in this particular direction—in other words—an active promoter of oxygenation and hæmatosis; but whatever substance be used must not interfere with the germicidal or anti-periodic value of the quinine.

Another essential also, the new combination must be freely soluble, more so than the medicinal sulphate, as this, when administered in the usual form of pills, is dependent upon an acid state of the stomach secretions for solution and absorption.

In corroboration of the above statements upon the pathological action of quinine, many authorities might be quoted, but so eminent a writer as J. Mitchell Bruce will probably be received as conclusive; upon this subject he says:

"Definite action of quinine on the blood:

1. It binds the oxygen more firmly to the hæmoglobin, so that oxygenation is less easy and less active.

2. It causes enlargement of the individual red corpuscles.

3. It paralyzes the leucocytes, when given in large doses, thus checking diapedesis, and reduces the number of visible leucocytes very greatly (to one-fourth).

4. In blood freshly drawn, it retards the formation of acid (loss of oxygen and increase of carbonic acid) which naturally occurs in blood removed from the vessels; and

5. It reduces the ozonizing power of blood, *e. g.*, on guaiacum and turpentine.

Altogether quinine manifestly interferes with oxygenation, the giving up of oxygen by the red corpuscles to oxydizable bodies, and with the functions of the white corpuscles."

"Quinine lowers the body temperature—

Reduces the amount of nitrogenous excretions.

These two sets of effects, taken together, point to a powerful action of quinine in reducing the metabolism of the body, of which heat and the excretions are the two most measureable products.

This conclusion is supported by other facts, observed out of the body, *viz.:*

A solution of albumen cannot be converted into peptone in an atmosphere of ozone, if quinine is present.

Healthy pus and fresh vegetable juices lose their ozonizing power if mixed with quinine.

Phosphorescent infusoria (rapidly oxydating protoplasmic masses) lose their phosphorescence in the presence of quinine.

Fungi absorb oxygen less readily, and many forms of fermentation are arrested in the presence of quinine.

We may therefore conclude that the effect of quinine in the body is to check metabolism by interfering with the oxydation of protoplasm generally, with oxygenation, and with the associated action of ferments.

Thus the fall of temperature produced by quinine is due to diminished production of heat in the body, not to increased loss of heat; and the fever causing processes themselves (probably allied to fermentation), are also controlled by the drug, which effects their organic causes, whether living organisms or complex chemical substances." J. MITCHELL BRUCE, M. D., M. B., M. A., F. R. C. P.

Large doses of sulphate of quinine produce disagreeable and sometimes dangerous symptoms, characterized chiefly by headache, vertigo, disturbance of vision, and deafness, which may remain permanent. The sulphate of quinine can hardly be given during the access of fever, as it produces gastric irritation, a condition already present from the complaint itself. Its daily use as a prophylactic is not unattended with unfavorable consequences. Owing to its insolubility, it irritates the stomach and intestines, interferes with the appetite, sometimes causes vomiting, and very frequently induces so much gastric and intestinal irritation as to lead to diarrhœa or dysentery. The addition of sulphuric or hydrochloric acid, to render it soluble, still further increases its irritant properties.

A thoughtful consideration of all the above statements, when considered with a view to a combination with such a substance as is best calculated to modify and correct the several toxic tendencies of quinine, brings one inevitably to the one remedy which is acknowledged to be at once the most powerful hæmatogenic, the most active promoter of tissue and organic oxidation, and the greatest stimulant to general functional activity now known—oxidizable phosphorus.

But the hypophosphite of quinine, which first suggests itself to the mind, is not suitable, as it is not soluble to any considerable

degree in water or aqueous menstrua; hence is not capable of immediate solution and absorption, conditions absolutely essential to prompt and successful therapeutic action.

The writer has for a long time been studying a new chemical combination of quinine and oxidizable phosphorus, Hypo-Quinidol (Gardner), which combines all the advantages of both in therapeutical aspects, as it does not produce the unpleasant and toxic action following the use of other forms of quinine, produces no cinchonism, though it has been administered in the dose of forty grains in twenty-four hours to an adult.

Its anti-periodic action is not only unimpaired, but increased, from the fact that it is so soluble; it deliquesces in the air, and its administration is therefore confined to the pill form, coated as a double protection against deliquescence and oxidation, and to conceal its very bitter taste.

The advantages to be gained by such a form of quinine, if the propositions above mentioned are true, need hardly be mentioned, as they appeal to every thoughtful physician. The results attained in the application of Hypo-Quinidol wherever it has been employed bear out the above statements.

An experimental test upon a rabbit weighing six pounds was made by a New York physician; one gramme was administered per oram, and one-half gramme by hypodermatic injection; the blood was carefully examined before and after the administration; no changes could be discovered in the condition of the blood; the rabbit remained in excellent condition during two weeks after the dose, being very lively, and his appetite was so enormous during this time that he could not get enough to eat.

The quantity administered to this rabbit was equivalent to seven hundred and fifty grains to an adult weighing 150 pounds.

This experiment seems to show that the pathogenic action of the quinine in Hypo-Quinidol (Gardner) is eliminated, so far as one test could establish such a result.

Wherever Hypo-Quinidol (Gardner) has been administered the reports have been uniformly favorable to its therapeutic action, results being superior to quinine sulphate, and in no case, so far, has the writer heard of the slightest effect of cinchonism, or other troubl· head symptoms from its use.

Hypo-Quinidol (Gardner) contains phosphorus in its lowest oxydizable condition, a non-irritant and easily assimilable form, while the combination being freely soluble, is immediately absorbed, and is much superior to the sulphate or bi-sulphate as an anti-periodic in remittent and intermittent fevers, in all malarial affections, especially fevers incident to the tropics, and as a general tonic.

The advantages of Hypo-Quinidol (Gardner) over other forms of quinine will be recognized when it is considered that in nearly all cases where quinine is indicated there is debility, prostration and lowered vitality.

That the tonic, anti-periodic and germicidal action of the quinine is re-enforced by the vitalizing and regenerating effect of the phosphorus upon the blood-forming process, as the hypophosphites are well known to be the most powerful hæmatogenics in the whole list of materia medica.

Now, as the effect of quinine is acknowledged by the highest authorities to alter the condition of the blood by interrupting and retarding the process of oxygenation, checking metabolism, interfering with the functions of the white corpuscles, causing enlargement of individual corpuscles, and reducing the ozonizing power of the blood, all of which are conditions which are directly antagonized by oxidizable phosphorus, it will be evident that such a combination should not only prevent the pathologic action of quinine on the blood, but very much hasten convalescence from low conditions, by its revitalizing and hæmatogenic properties.

Dose.—The dose of Hypo-Quinidol (Gardner) as a tonic is the same as is ordinarily prescribed of the sulphate of quinine, say one or two grains, three or four times a day, after meals.

This quantity is sufficient to act as a prophylactic where malaria prevails, and will be found to effectually prevent such attacks. Even smaller quantities administered at regular intervals, if the disease is not prevalent in a severe type, will suffice. In intermittent and remittent fevers the dose must be increased to such a quantity as to control the fever, probably ten grains or more, administered either in divided doses, or as much as ten grains at one dose, as may be required to effect the desired result.

It seems unnecessary to dwell more upon the detail of dose, or method of use, as every physician will use his own judgment, accord-

ing to the case in hand, and the preparation has already been exhaustively described in the foregoing.

THE ETIOLOGY OF PHTHISIS.

A SUMMARY OF SCIENTIFIC POINTS INVOLVED IN CHURCHILL'S THEORY.

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(Reprinted from the *Journal of the American Medical Association*, March 4, 1899.)

The animal system contains an essential constituent of the brain and nervous substance, of the blood discs, of the muscles, of the albuminoid compounds, of the spermatozoa, of the egg, in a word, of the most important part of the organism—a *phosphide* element which has not yet been completely analyzed or isolated as a chemic compound, which has been called by many different names, but which is now clearly recognized as distinct from the phosphatic element. The essential characteristic of this *phosphide* element is that the phosphorus is contained in it in a state of molecular combination with the other chemic principles, and is not yet oxidized, while in the phosphatic element, such as the phosphate of lime in the bones, it is completely oxidized. This phosphide element is, of all the materials of the system, the one which has the greatest affinity for oxygen, and seems to be in animals, one, if not the first, of the primordial initiators of vital activity. Its office is not only to become oxidized itself, but to promote intraorganic combustion, and hence, very likely to initiate the molecular metamorphoses of most of the other proximate animal principles.

The decrease in the system of this phosphide element, either from excessive waste or from a deficiency in its reintegration, constitutes a distinct and special morbid condition of the whole system, to which Churchill gives the name "phosphology." This pathologic condition leads to a decrease of oxidation, consequently, of all organic metamorphoses and of all vital action, and is characterized by the whole series of symptoms which precede or accompany a numerous class of diseases, and which have vaguely been called "deficient or lowered vitality." When this decrease of the phosphide element attains a certain degree of intensity, the oxidizability of cer-

tain compounds in the system is so much diminished that they become incapable of sufficient combustion, either to proceed to a higher state of vitality or to go through that process of disintegration which would lead to their excretion from the system. Under such circumstances these compounds constitute an abnormal material, consisting of incompletely developed bioplasm or proteic substance, variable in its composition, forming the different pathologic deposits known under the name of "tubercles," which are the anatomic characteristics of phthisis and scrofula.

The biochemic difference between phthisis and scrofula consists in a different degree of phosphology. In scrofula the phosphology is less than in phthisis, so that the exhaustion of the phosphide element in the bioplasm only takes place during a secondary or subsequent phase of its evolution. This theory of "phosphology" enables us to account for nearly all the phenomena hitherto met with in tubercular disease. Such are the morbid physiologic phenomena in the respiratory, circulatory, urinary and calorific functions; the elective preference shown by the tubercular deposit for different systems or organs; the affinity between tuberculosis, scrofula, spanemia and chlorosis; the antagonism between tuberculosis and cancer, and between tuberculosis and cyanosis; the prevalence of tuberculosis in certain classes of animals, and its rarity in others; the mode of action of the different etiologic causes which promote or produce, and of the different cosmic or organic conditions, which aggravate or interfere with and retard tuberculosis and tuberculization.

The administration of an oxidizable and assimilable compound of phosphorus under certain determinate, pathologic and therapeutic conditions has the constant effect of preventing any fresh deposit of tubercular matter. Hence we must conclude that this substance produces in the system some peculiar modification incompatible with the existence of the tubercular diathesis, or, in other terms, that it destroys some one of the essential conditions of this morbid state. If the existence of the tubercular diathesis is prevented by an increase of the oxidizable phosphorus in the system, we are naturally led to conclude that just as the want of iron in animals is the cause of spanemia, owing to a deficiency of the globulin in the blood globules, of which iron is an essential element, so the want of the phosphide ele-

ment is one of the essential conditions, or, in other terms, a proximate cause of the tubercular diathesis.

But what other reasons are there that should induce us to admit that the initial stage of tuberculosis is the want in the system of the proximate organic principles containing phosphorus in an oxidizable condition? In the present state of our knowledge it can not be settled by chemic analysis: 1, because the best process hitherto known for isolating the phosphide principles, cerebrin, protagon or lecithin, and phosphoglyceric acid is complicated and uncertain; 2, because they can only be obtained in such small proportions that their quantitative analysis is difficult and uncertain; 3, because, even if a sufficient quantity of the proximate element itself be obtained, it has been found impossible hitherto to separate the phosphide principle from it without previously oxidizing it, or breaking it up. All the attempts hitherto made to adequately analyze the blood of consumptive patients for the determination of this point have failed. We must therefore seek for proofs of the theory of a phosphologic diathesis in a complete and exhaustive survey of the physiologic and pathologic bearings of tuberculosis. Among the half-understood and often contradictory facts hitherto ascertained about the proximate principle, there are certain results which we may take as a starting point. The elements of which living bodies consist are all primitively derived from inorganic matter. But at first sight they may be divided into two great classes. The first class is composed of compounds made up of the elements, carbon, hydrogen, oxygen and nitrogen, the elements which are common to all biologic or living compounds. The elements potassium, sodium, calcium, magnesium, chlorin, silicon, sulphur, iron and phosphorus are less uniformly present. Their sphere of action is much more limited: they seem chiefly intended, either by themselves or for the purpose of modifying—through their secondary combinations, whether saline or others, carbonates, phosphates, chlorids, etc.—the condition of the special proximate principles composed of the first four elements, and of varying their qualities and affinities according to the different combinations produced between the compounds of the first and those of the second class. This view has governed the chemistry of vegetable bodies, and has led to important applications in agriculture. The use of the sali

compounds in vegetation has been established, and to a certain degree, elucidated.

For animal life the results obtained are not so far advanced. Liebig was the first to establish the fact that the elements of the latter class are the indispensable mediators of all functional action; that they are necessary to the assimilation of nutriment by the system; and that life can not be supported by any substance where they are absent.

We may, therefore, assume it to be an established fact that the changes which take place during life in the proper organic matter (compounds of carbon, oxygen, hydrogen and nitrogen) of living beings, are modified and regulated by the elements of the second class. Among these principles, some, such as potassium, sodium, calcium, magnesium, the phosphates, carbonates, sulphates, chlorids, etc., are found in the system as proximate principles, that is to say, they either exist in the same form as in inorganic chemistry, or may be separate from their compounds without breaking them up and destroying their chemic composition. These may be called the immediate inorganic principles. There is, therefore, a fundamental difference beween these two classes of biologic elements. The first always form saline combinations of the same type as in the mineral kingdom; the second often exist in the proximate principles in a molecular state. The first have no affinity for oxygen, either because such affinity is very weak or is already completely satisfied. These elements and their compounds, therefore, take no immediate share in the process of intraorganic oxidation, which is the primordial fact of all higher vitality, and are thus without any direct influence upon the primary molecular changes which flow therefrom. When their secondary part in the system is played out, they are excreted in the same chemic form as when fulfilling their functions, hence we may conclude that these functions are rather of a static than a dynamic character.

On the other hand, the substances comprised in the second class, the mediate biologic elements, have all three as much affinity for oxygen as the elements, carbon, hydrogen and nitrogen themselves, sometimes even more. Usually they are expelled from the system after their affinity for oxygen has been completely satisfied. Hence,

we may reasonably conclude that, like the elements carbon, hydrogen and nitrogen, their function is rather dynamic than static, and that like these elements, they bear some direct and immediate relation to the initial phenomenon of all vitality—oxidation. Now, as oxidation is the primordial phenomenon of vitality, as there is no function, no act of living beings in which this chemic process is not either directly or indirectly concerned, we shall not be overstepping the limits of scientific induction by concluding that the importance of the constituent elements of the system is in direct proportion to the strength of their affinity for oxygen. If we examine the different oxidizable elements contained in the animal system, we see that their affinity for oxygen varies very much. They may be ranged in the following manner according to their increasing affinity for oxygen—nitrogen, hydrogen, carbon, sulphur, iron and phosphorus.

Another consideration of equal importance with their tendency to combine with oxygen is their power of producing heat. Heat is both a result and a constant condition of all the molecular actions which take place in living beings, and above all in animals. Here, however, we find that the power these bodies have of developing heat by combining with oxygen does not follow the same scale as their affinity for it. If we class the combustible elements of the system according to their heat equivalent, that is to say, according to the quantity of water which they can raise one degree in temperature by combining with the same quantity of oxygen, we shall find that they rank in the following order—phosphorus 36.072, hydrogen 33.808, iron 33.072, carbon 23.696, sulphur 17.660. So that, among all the oxidizable elements of the system, phosphorus is the one that possesses the highest heat equivalent, and consequently, whose reaction upon a given quantity of oxygen will raise highest the temperature of the combining bodies.

We are thus justified in inferring that of all the proximate principles in the animal system, those which contain the phosphide element must have the greatest affinity for oxygen and the greatest calorific capacity, and that they must influence more powerfully than any other compounds the two primary physical and chemic conditions of animal life, particularly among the warm blooded animals: intra-organic combustion and the production of heat. If we look further,

we shall be immediately struck with this fact: the phosphide element is especially met with in all tissues and organs whose office it is to initiate vital action. It is found in the nervous and muscular substance, which initiates intellectual or animal activity; in the globules of the blood, whose function it is to enable the external atmospheric medium to re-act throughout them as a vehicle upon the inmost recesses of the organism; in the primary metamorphic substances, albumin, fibrin, etc., which constitute the substratum, the *nidus formativus*, the blastema or protoplasm of all the tissues, and which, by their molecular actions of integration or disintegration, supply the materials of every vital act; lastly, it is met with in spermatic matter and in the egg, which affords the most characteristic manifestation of all vitality—the production of a new being.

If the bacillus of tuberculosis depends for its deadly effectiveness on a decrease in the system of a combustible and calorific element, such as oxidizable phosphorus, it follows that in this disease there must be a decrease of general oxidation, and a lowering of animal temperature. That this is the case has been established. The same fact is proved by the aspect of the blood. It has long been a matter of observation by physicians that the venous blood of consumptives is redder than in the normal condition. Now, we know that the black color of venous blood depends upon the presence of carbonic acid. Experiments on the glands and muscles have shown that the blackness of venous blood is owing to its having already been employed in molecular metamorphosis; that the blackness is in proportion to the intensity of this molecular action, and that it increases with this intensity. The use of the hypophosphite darkens the color of the venous blood, not only up to, but beyond its natural tint. The fact of diminished oxidation is also shown by the deposit in the urine of consumptive patients showing an excess of uric acid, with a corresponding decrease of urea. These urinary sediments usually diminish or disappear under the use of the hypophosphite. That this is due to an increase of oxidation will be apparent by comparing the formula of uric acid with that of urea.

The hypothesis agrees equally well with the anatomic as with the physiologic facts of tuberculosis. If the bioplasmic or proteic substances are incompletely oxidized, and insufficiently so to either

obtain a higher degree of organization or to be excreted, they will be deposited in the tissues and, so to speak, precipitated, like the decomposed elements of a saline solution, in the form of amorphous or incompletely organized material. The more important share any organ takes in the process of oxidation, the more liable will it be to this deposit of tubercular matter. If, as is now generally admitted, that part of the respiratory process which takes place in the lungs consists in oxidation of at least a portion of the combustible substances in the blood, it is evident that this chemic change will first be undergone by those which have the greatest affinity for oxygen. The proximate principles containing the phosphide elements must thus be the first to undergo this process; and if, owing to their deficiency in their characteristic element, phosphorus, this oxidation is insufficient, it is evident that the deposit resulting from this incomplete process ought to appear first of all in the lung. Out of 1136 cases of tuberculosis examined by Papavoine, the deposit was in the lungs in 1030. Wherever the function of oxidation is more active, that will be the chief place for the deposit of tubercular matter. In ordinary respiration it is the upper portion of the lung—the apex or top—which comes most into play; the lower portion only does so during forced inspiration. The tubercular deposit ought, therefore, to be more abundant at the top of the lung than in the rest. This is exactly what has been shown to be the case. Louis has shown that out of 123 cases of phthisis, the tubercles were more numerous, larger, and more advanced in their development at the apex than at the base in 121 cases; and Heusinger found that in birds this was the preferential seat of the deposit.

Besides the oxidation which takes place in the lungs and in the tissues, there is a secondary system of circulation, whose office it is to take up the elements which have not completely fulfilled their biologic evolution, to subject them to a new elaboration, and to return them into the general circulation, so that they may a second time co-operate in the general nutrition of the organism. This is the lymphatic system, the essential components of which are two kinds of organs, vessels and glands, the former serving to convey the substances absorbed, the latter to subject them to a new elaboration before they are returned into the circulation. The object of this is probably to com-

plete the oxidation of material which has not already fully undergone that process, either in the lungs or the capillaries. Each lymphatic gland may therefore be looked upon as a small supplementary kind of lung, intended to complete the oxidation of the less oxidizable substances of the system, which require to be placed for a longer time in contact with oxygen to finish their organic evolution. The proof of this is that the glands consist of a cortical substance composed of a fine net-work of afferent vessels and arterial capillaries, where the absorbed matters come in contact with oxygenated blood, after which they enter the substance of the gland, and are conveyed toward the general circulatory system; the object of this arrangement must be the oxidation of the bioplasm contained in the gland.

Now this will only take place provided the substances to be oxidized have a certain degree of affinity for oxygen. If we admit the existence of a phosphide principle, not only oxidizable itself, but capable of communicating its combustibility to other substances, it is easy to understand how the deficiency of this principle will produce here, as in the lungs, incomplete oxidation—that is, an arrest of development, the formation of incompletely elaborated material—in a word, tubercular matter. The physiologic function of these organs thus shows, upon the theory of phosphology, why, next to the lungs, the lymphatic glands are the organs most prone to tuberculization. This is especially the case with the glands of the mesentery and of the intestine.

If the phosphologic diathesis be the cause of the production of tubercle, the tubercular matter must vary, to a certain extent, in its composition and appearances, because both of these will depend upon two conditions—the degree of deficiency of the phosphide element, and the nature of the materials from which it has been derived by a process of insufficient oxidation. This affords a satisfactory explanation of the varied forms presented by tubercular and scrofulous deposits. Tubercular matter is bioplasmic albuminoid substance, imperfectly developed on account of its having undergone incomplete oxidation, not because there is a deficiency of oxygen, but because the materials themselves have lost their affinity for it, in consequence of a decrease of the phosphide element.

If this theory be correct, it ought to be confirmed by the elementary chemic analysis of tubercular matter. The chemic analysis of

tubercular matter, as well as of the blood, in phthisis, is incompetent to decide whether there really be or not a decrease in the phosphide element; but what it does show is that tubercular matter is a bioplasmic or proteic substance, from which a certain but variable number of atoms of carbon, hydrogen and oxygen have been subtracted. If we take as the composition of protein the formula adopted by Liebig, $C_{48}\ H_{36}\ N_6\ O_{14}$, we shall find that the results given by Scherer's analysis of tubercle in different organs prove that these really are a residue of oxidized proteic or albuminoid materials, and singularly confirm the explanations given above, by showing that the tubercular matter in the lungs contained a less quantity of carbon and hydrogen, that is, had undergone a greater amount of oxidation, than the tubercular matter found in other organs. The formulæ found by Scherer for tubercle were—in the lungs, $C_{43}\ H_{35}\ N_6\ O_{13}$, in the liver, $C_{46}\ H_{36}\ N_6\ O_{13}$, in the peritoneum, $C_{46}\ H_{36}\ N_6\ O_{13}$, in the brain, $C_{46}\ H_{37}\ N_6\ O_{13}$, in the mesentery, $C_{46}\ H_{38}\ N_6\ O_{12}$. We thus see why tubercles in the different organs present, not only a difference in chemic composition, but also varying histologic forms, although retaining, particularly to the naked eye, a common and uniform aspect.

The theory of "phosphology" assumes that some of the proximate phosphorous principles in the system are deficient in the phosphide element which constitutes their essential characteristic. Although chemic analysis has hitherto been unable directly to decide this question, it is a singular fact that all analyses yet made which bear upon the point coincide in confirming the theory. Frick found, on analyzing the blood in four tuberculous cases in the first stage, that there was a notable diminution of its inorganic elements. In these analyses, the phosphide and phosphatic elements were confounded together, and calculated after oxidation as phosphates. He found that in 1000 parts of tubercular blood, the maximum of these phosphates was 0.351, the minimum was 0.197, the mean 0.291, while the mean in the normal condition was 0.874. What reason is there to suppose that this want of oxidizability depends upon a deficiency of the phosphide element, rather than upon any other modification, which may have diminished the affinity for oxygen of the different albuminoid compounds? The reasons are the following: 1, it is a fact that an oxidizable phosphorus-element exists in the albuminoid

principles; 2, this element must be the most oxidizable part of them; 3, a preparation of phosphorus which is both assimilable and oxidizable—the hypophosphite—has a constant action against tuberculosis.

Another class of facts confirm this view. In the herbivora, phthisis is much more common than in flesh-eating animals. The latter find the phosphide element already formed in their food; the former do not because the phosphide element does not exist in vegetables, so that as their blood contains a smaller quantity of phosphorus compounds, they must be much more liable to experience the want of them. This is not only true of mammiferous animals, but holds equally good in birds. It has been shown that in birds of prey, which live upon flesh, tubercles are hardly ever met with, either in the lungs or elsewhere, while they are common in other classes of birds. The theory of "phosphology" gives the key to several clinical phenomena which have hitherto been unexplained. A portion at least of the phosphates excreted from the system must proceed from the combustion of the oxidizable phosphorus elements, so that, when there is no change of diet, we may conclude that there will be a relative proportion between the amount of excreted phosphates and the waste of oxidizable phosphorus. If such be the case, we may expect to see phthisis developed whenever there is a permanent increase in the amount of phosphates excreted. Clinical observation shows that such is really the case, and the coincidence between tuberculosis and the increase of the phosphatic urinary excretion has been fully established: The phosphatic excretion is greatly increased during attacks of insanity, and a large proportion of the insane do, in fact, fall victims to phthisis. The proximate principles containing the phosphide element are chiefly met with in the nervous substance, and it has been established by the researches of a number of experimenters that there is a direct connection between the amount of phosphates excreted in the urine and cerebral or nervous wear and tear. The excessive phosphatic secretion prevailing in phthisis has been found to decrease during an improvement in the condition of consumptives.

In the former part of this paper it is stated that: "The administration of an oxidizable and assimilable compound of phosphorus under certain determinate *pathologic* and *therapeutic* conditions, has the constant effect of preventing any fresh deposit of tubercular mat-

ter." This statement has been made advisedly; unless these determinate conditions are carefully considered and followed, the hoped-for success in the treatment will not be experienced. There are many conditions, pathologic, therapeutic and pharmaceutic, which must be observed by the practitioner, if he would meet the success which is possible in the treatment of tuberculosis.

The diagnosis of the disease must be very carefully carried out in detail, that the appropriate hypophosphite salt indicated by the condition, may be selected. In the ordinary treatment usually followed, it has only been considered necessary to diagnose the main fact of the character of the disease, without carefully studying its varied manifestations in detail. The treatment is prescribed in a general way, a fixed general routine is advised, and the disease being chronic, it is not considered necessary that the patient should report frequently; and often weeks elapse, during which time he is not under the observation of his medical adviser. But if the hypophosphites are scientifically employed these conditions must be investigated; the patient must be carefully watched by his physicians; the doses of the particularly indicated hypophosphite should be carefully graded to meet the immediate condition of the patient, as hypophosphites in overdoses produce toxic effects on tuberculous patients; these doses should be varied from day to day, according to results produced; contraindicated hypophosphite salts and combinations of different hypophosphites must not be employed; anodynes, narcotics, stimulants, cod-liver oil and other special remedies designed to ameliorate certain prominent symptoms, such as coughs, night-sweats, etc., must be abandoned, as they operate against the object sought to be attained by the hypophosphite treatment; some of them—cod liver oil and stimulants—prevent oxidation in the tissues; others produce prostration and congestion, and while they may appear to relieve for the time being some of the more prominent symptoms, their after-effects are injurious to the patient, while exerting no action against tuberculosis warranting their use, accidental complications—bronchitis, laryngitis, etc.—when present should be treated alone, by the usual remedies, until the acute stage is passed, the hypophosphite being in the meantime suspended, in the absence of complications, the indicated hypophosphite should be given, with occasional [illegible] of a few

days at a time, in proper discriminative doses, until the diathesis is removed, and thereafter, occasionally as a prophylactic, as often as indications show any signs of a return of the diathesis.

The hypophosphites of soda, lime, and occasionally quinin, are alone to be employed; these should never be administered in combination, as their therapeutic action differs; as the use of either the lime or soda salt depends upon certain conditions of expectoration and other conditions, they should be alternated according to effect desired; the basis of the hypophosphites of potassium, iron, manganese, etc., are contraindicated therapeutically, their use producing various pathogenic symptoms, such as hemorrhage, rapid sloughing of tubercular deposit, and other dangerous effects; the further advanced the case, the more careful should the prescriber be to keep the dose within the sphere of its physiologic action, as advanced cases are very much more susceptible to overdosing than those in the incipient stage.

The neglect of the profession to give proper attention to pharmaceutic requirements, is one of the principal causes of failure. The hypophosphites of soda and lime should each be specially prepared in strict accord with the recommendations of Churchill—be chemically pure, of neutral reaction, and in other respects made to conform with his views, and as soon as so prepared, should be at once protected against atmospheric oxidation by a chemically pure syrup. The syrup is not used to render the preparation palatable, for there is scarcely any taste to these salts when pure, but as an indispensable requirement to preserve the perfected salts in proper condition for medication. These have been in the past, and are now, the only reasons why hypophosphites are not constantly successful in this disease. The consideration of these conditions would make a long article by itself, and can not be exhaustively treated of here.

It is a remarkable fact that so many physicians appear to ignore nearly all the foregoing indispensable conditions as laid down by Churchill; they appear to think that anything called a hypophosphite, no matter how impure, any complex combination of different hypophosphites, no matter how antagonistic their action may be, will meet the constantly varying conditions of the patient; if hemorrhages are produced they are attributed to the inevitable progress of the disease,

not to indiscriminate dosing, which is oftenest the real cause; no attention is paid to the special indications of each hypophosphite, to the scientific adaptation of the one suitable remedy to the particular morbid state; these facts are so largely overlooked that it is an exceptional case where they are observed; that this is true is shown by the common practice of prescribing indiscriminate and therapeutically contraindicated combinations of half a dozen hypophosphites, upon all occasions, for every purpose and in enormously excessive doses.

These considerations show why the treatment of phthisis with the hypophosphites meets with constant failure; why they have been so frequently discarded as useless after a futile trial. Unless a physician is willing to make a study of the scientific application of these remedies in this disease and carefully follow them, and insist upon prescribing only suitable preparations of them, he cannot expect to meet with success. Under such conditions, the fault is not that the Churchill theory is not sound nor that hypophosphites are not proper remedies for the disease, but simply that the treatment has not been properly carried out.

CHURCHILL AND OTHER EMINENT AUTHORITIES ON THE THERAPEUTIC ACTION OF HYPOPHOSPHITES, IN PHTHISIS AND OTHER DISEASES.

Physiogenic Effects.—Physiogenic action consists in the increase or decrease of some one, or several, of the natural functions, without their exceeding the physiological or their natural and healthful limit, and consequently without the production of morbid phenomena. These may be classified as follows:

Increase of nervous energy, with unusual feeling of ease and comfort.

Increase of appetite, improved digestion, more regular action of the bowels.

Increased activity of hematosis, or the blood-forming process.

After a time, evident signs of venous plethora, shown in color of the face, redness of the mucous membrane of the lips and eyes, and the fullness of the superficial veins.

Menstruation becomes easier, more abundant, and regular.

Patient generally gains in weight, with, seemingly, at first, no increase in adipose tissue.

This increase of nutritive action is sometimes remarkably manifest in development of hair and teeth."

[When given to teething children who are pale, peevish, sad, emaciated, without appetite or strength, suffering from fever and diarrhœa, loss of sleep, and apparently in imminent danger of convulsions, I have never seen a single case where the whole of these symptoms have not yielded to a few doses of Hypophosphite of Lime, and the evolution of the teeth afterward, proceed as if in perfect health.]

Pathogenic Effects.—These include all effects produced by the remedy, different from those which exist in the normal state. As soon as there is any manifestation of a morbid phenomenon, the action must be looked upon as pathogenic.

These effects are produced when the Hypophosphites have been taken too long, or in too large doses.

Breathing may become short and uneasy; there are pains in the

chest and aggravation of cough and expectoration, and at this period ausculation frequently shows increase of the local signs, consequent upon augmented hyperæmia of the lungs.

If, in spite of these symptoms, the use of the remedy is persevered in, hæmorrhage takes place from the respiratory, or even from the digestive mucous membrane. This generally makes its first appearance in the shape of bleeding from the nose, after which there may be an attack of hæmoptysis, perhaps for the first time.

Persons kept in this condition for a time are affected with piles, and those which they formerly had, and which had disappeared, are reproduced; this may go to the extent of real intestinal hæmorrhage.

Most of the symptoms may show themselves from the very beginning of the treatment, if it is begun with too large doses.

They are more easily and rapidly produced in proportion to the youth and sensitiveness of the patient, as in the case of women, children, and people of nervous or sanguine temperament.

Among the different signs of this pathogenic condition, two deserve particular attention.

Fulness of the face; and bleeding at the nose.

The fulness of the face, as the name indicates, refers to a peculiar look of the patient, similar to what may be observed in delicate persons after a hearty meal, or after moderate exercise. There is often a flush on the face; which to the inexperienced observer resembles that of perfect health; the cheeks are less hollow, sometimes appear quite full, and when this state has reached its maximum, there is a slight swelling or puffiness of the malar region, and the lower eyelid.

This peculiar aspect is not the same as the look of hectic fever. The redness of the facies is not sharply circumscribed to the cheeks, but spread over the whole face, as in a state of health.

When once carefully observed it is not difficult to recognize again. The slighter the amouut of local lesion, the more strongly marked it appears, and the earlier it occurs; sometimes at the end of a few days.

It is more apparent in persons of a lymphatic or sanguine, than those of a bilious or nervous temperament.

This is a sign of great clinical value, for it indicates that the

physiogenic action of the remedy is near or has already reached its maximum.

It is therefore highly important that it should be recognized in time, as it enables the physician to forsee, and consequently by suspending or decreasing the treatment, to prevent the accidents or complications which would not fail to follow if it were injudiciously persevered in.

This fulness of the facies marks the limit of physiogenic action.

Epistaxis shows that the patient is entering the sphere of pathogenic phenomena. These latter are frequently preceded by this sign, which is, therefore, particularly worthy of attention.

I have shown the necessity of distinguishing between the physiogenic action of a remedy and its pathogenic manifestations. In like manner it is indispensable that a distinction should be made between its therapeutic effects, and the curative result.

As I have already explained, the therapeutical effects of a medicinal agent are the result, either of its physiogenic or of its pathogenic action; but they are of a more complex order, while they are less complex than the curative result.

Each step in these different orders of phenomena, therefore requires for its manifestation an increasing number of conditions, because each step in the scale is more complex than the one which precedes it.

The cure will be the final term, the result of the different antecedent modifications produced in the system and can only be arrived at *provided they are maintained within certain limits, and kept up for a sufficient length of time. Churchill.*

The Bacillus.—Upon this subject Dr. Churchill says:

The discovery by Koch, of a micro-organism characteristic of tubercle, has induced some people to suppose that the new theory rendered all our previous knowledge of the subject useless. Let us see how far this is correct.

The ascertained facts may be summed up as follows:

The cells of tubercle, particularly the giant cells, contain microscopic objects, having the shape of rods, which occur singly, in pairs, or in bundles. They are non-motile, they form spores, can be culti-

vated artificially out of the body in different animal media, such as the serum of the blood, and these artificial productions may be inoculated and reproduce the original disease.

How much of this knowledge of facts only comes to confirm our previous knowledge, and how much, is really an addition to it?

First of all, as a means of diagnosis, some observers contend that the characteristic bacilli are always met with in tuberculosis; this, however, is not yet established beyond doubt. But even if it were, it would not carry us much further than we were before. The microscopic characters of tubercle are well known, and there are few cases in which it may not be recognized with the naked eye.

So also with regard to the diagnosis of the disease. It is not very often that the history of a case, coupled with the local chest signs, will leave an experienced practitioner in any doubt as to the nature of the case he has to deal with. So far, therefore, it is in a small number of doubtful cases that the presence of the new bacillus would be important, provided always, that it be estabished beyond doubt, which is not the case, that the bacillus is the efficient cause of tubercle.

Again, the upholders of this doctrine contend, that these bacilli may be inoculated, but this we already know to be the case with tubercle itself.

The importance of the inoculability of the bacillus, and of its propagation by artificial cultivation, would thus be very much diminished indeed, and we should be thrown back upon the old question of heterogenesis.

Frœdlander says he has produced tuberculosis in guinea-pigs by making them inhale a spray containing the tubercle bacilli, hence it has been hastily concluded that tuberculosis and phthisis was eminently a contagious disease; and from this hasty inference a number of equally unfounded and hasty inferences were as hastily drawn. * * * *.

Common sense and every day experience go but a very little way in this direction. Statistics show that nurses, physicians, and other persons in constant contact with consumptives, are not more liable to the disease than others. And if an individual instance could be of

any value, I might say that for forty years I have been almost in daily contact, for hours together, with consumptive patients.

Besides, whatever may be the fate of the new and important researches, concerning the micro-organisms, as connected with disease, the results of therapeutical practice are independent of them. Just as quinine was found to be an antidote for intermittent fever, centuries before the discovery of the *marsh spirochæta*, its characteristic bacillus, so I may say at the present day, millions of cases of consumption have been cured by the Hypophosphites, before the discovery of the tubercle bacillus, and will continue to be so, whether the microbe becomes an established fact or not. *Churchill*, 1888.

General Action of Hypophosphites.—The following statement by Churchill as to the *general* action of the Hypophosphites is so comprehensive, and covers indications in so many morbid conditions, that I quote it in this connection:

"The effect of the Hypophosphites on the tubercular constitution depends upon a *general action in the system*, which at a future day will come to be recognized as of still greater importance than their effects in disease. In our present imperfect social state, there is a constant tendency to increased disturbance of the conditions of normal nutrition, which is effectually combated by the use of the Hypophosphites as an occasional and temporary nutriment.

This result can be obtained by no other means hitherto known than the use of some one of the oxidizable phosphorus compounds, the best of which are the Hypophosphites.

By means of these therapeutical agents, the functions of innervation or nerve power, of sanguification or blood-forming process, and of interstitial nutrition, which are the three primordial functions in the animal system, may be kept or gradually raised to the very highest degree of intensity of which the organic conditions of the subject will admit.

Precautions.—The following precautions must always be observed. If tuberculosis depends upon the want of the oxidizable phosphorus in the system, it is clear that the introduction and assimilation of the Hypophosphites will supply this want, but this phosphorus does not exist in the organism in an isolated or free state. It is only one, although the most important and characteristic

among several other principles which unite to make up the phosphide, or oxidizable phosphorized proximate principles. These other elements must be provided by the organism, must combine with the new element medicinally supplied, and the resulting compounds must be built up in the system itself. This is a process of integration which depends, it is true, upon the presence in the system of the elements required, without which it cannot take place, but which is influenced by the activity of other functions, and above all by those of assimilation, respiration and sanguification. Now each of these three different functions may vary, and do vary, in every individual, so that even should the phosphorized element be always supplied in the same quantity, it will not be worked up in all cases with the same amount of activity. It is evident, for instance, that a patient in whom the appetite or digestive function is impaired will take less nutriment, even if he takes the same amount of phosphorus, and consequently build up less of the principles containing the phosphide element, than one in whom the digestive functions are sound. The same will be the case when the lungs are seriously damaged and the respiratory power considerably impaired. Here the activity of sanguification will be diminished, because all the elements of nutrition supplied by the digestive process must first pass through the lungs and be sufficiently oxidized before they become completely incorporated in the blood, and are, so to speak, adopted by the system. It follows from this that the improvement of a consumptive patient under the Hypophosphites should be slow and gradual. The more advanced the disease, the more gradual should be the improvement and the more serious will be the induction of pathogenic symptoms. This last circumstance is the more important, because the existence of a relative state of plethora is the prime condition of cure, but it is also at the same time a predisposing cause of hyperæmia of the lung tissue surrounding the tubercular matter, consequently of inflammation and of softening of the tubercular deposit.

I have often seen cases in which the use of excessive or too prolonged doses of the Hypophosphites has brought on rapid softening of the tubercular deposit and a fatal issue in patients, who shortly before had appeared in a fair way of recovery under the treatment.

When there is any predisposition to hæmorrhage, the action of

the specific should be carefully watched. This, however, is not a counter-indication to the use of the Hypophosphites. It frequently happens, on the contrary, that the tendency to hæmorrhage disappears under their influence, particularly when it depends upon the diathetic and spanhæmic condition, that is, upon the want of plasticity and vitality in the blood. I have published several cases in support of this view, which have since been confirmed by other observers.

As I have seen cases of softening induced by overdoses of the Hypophosphite, so likewise I have either known of, or have witnessed attacks of hæmorrhage, evidently owing to the same cause, or to the concurrent use along with the Hypophosphites of Cod Liver Oil or of Iron; sometimes to the injudicious use, in lieu of the Hypophosphite of Soda, or Lime, to the Hypophosphite of Iron, or even of free Hypophosphorous Acid, given by the physician on account of their greater activity; to the over excitement of the circulation by stimulating liquors; or, lastly, to the use of a heterogeneous jumble of different Hypophosphites; oftentimes, alas! for the poor patient, to a mass of powerful therapeutic agents dished up together.

I remember among many similar cases a consumptive child, nine years of age, who had been ordered to take every day a tablespoonful of Syrup of Hypophosphite of Iron, a large dose of cod liver oil, a powerful tonic and a glass of port wine.

I will now examine successively two different kinds of results which may follow upon the use of the Hypophosphites.

Supposing that the primary condition, that of purity of the remedy, has been secured, I find that when an improvement does take place, the first signs of it usually show themselves more or less during the first week. Sometimes the patient notices it from the very first day. It is seldom delayed beyond a fortnight, though in some exceptional cases I have known it not to become apparent till after the lapse of as long a time as six weeks. You must not, therefore, despair of the remedy if its action be not immediately manifest. Sometimes the improvement is apparent for all the symptoms at once; sometimes only for some; at times for a single one. The appetite is sometimes the first function to improve. At other times it is the strength, or it may be the cough, or sleep, or perhaps fever. The younger the patient, the more limited and the more recent the

disease, the shorter is the time usually required for the first reappearance of improvement.

Narcotics, opiates and sedatives produce a contrary effect to that of the Hypophosphites. They prevent the return of appetite, they bring on or increase weakness and night-sweats. When, as is frequently the case, the patient has been under palliative treatment of this kind for some time previous to his taking the Hypophosphites, the action of the latter will generally be delayed thereby. When narcotics or sedatives have been used for the purpose of allaying harassing cough at night, it will frequently happen that their suppression will be attended with more or less distress to the patient. But it must be persisted in if we wish to obtain the effects of the specific treatment.

Of late years several pharmaceutical preparations have been largely advertised, which consist of a heterogeneous jumble of Hypophosphites, most of which are positively injurious in consumption, as I have before said, and could only be prescribed by a practitioner who understood the matter, if it were wished with deliberate purpose that a patient should only improve for a time and ultimately not get well. These different Hypophosphites are usually associated with strychnia. A mere inspection of them suffices to show that in a pharmaceutical point of view they are utterly ridiculous, if the word monstrous would not be more deservedly applied in a case like this, where the lives of thousands of persons are at stake. It strikes me as wonderful beyond belief that such preparations should by pertinacious quacking have received such acceptance among the profession, and that a medical journal could have proposed that any such as these should be inserted in the British Pharmacopœia.

Not a week passes without my meeting with cases where consumptive patients are going to the bad after a temporary improvement derived from the use of these preparations.

It is thus seen that there exists a number of serious causes of error which should be carefully avoided, as they may easily be, when they are once pointed out. It will occasionally happen that the patient will look upon certain disturbances following the action of the Hypophosphites as unfavorable, and be thus induced to give up the treatment. Such are the following: The morning is usually the

best time to give the Hypophosphite, but in children and in delicate, highly nervous persons, if the remedy be taken in the morning, its stimulating effect will sometimes become apparent during the night, and the patient will complain of restlessness and want of sleep. This will usually be got rid of by changing the hour of administration.

By giving the remedy at bed time absorption and assimilation take place during the night, and its physiogenic effects of increased comfort, strength and activity will then manifest themselves during the day.

Sometimes the patient's appetite increases considerably, but the digestive power, owing to the still deficient supply both in the quantity and the quality of the blood, has not improved in the same ratio. The patient, therefore, complains of increased difficulty of digestion.

This is attributed to the Hypophosphites, and they are struck out. By observing the very simple precaution of keeping at first to the same regimen, and the same amount of food, and only changing and increasing them by slow degrees, this apparently unfavorable effect of the Hypophosphites will be seen to be a result of the efficacy of their action.

Many cases, however, of gastric disturbance noticed by other observers have been undoubtedly due not to this cause, but to the impurity of the salts used.

In the use of these remedies one should never lose sight of the necessity of advancing slowly and gradually along the whole line of improvement. There must be no sudden spurt or burst, and no one function can be stimulated physiologically and usefully to the patient, unless the others are able to follow and keep up with it.

Health is nothing but the equilibrium of all the functions of the system. *Churchill*, 1888.

PHOSPHATES AND HYPOPHOSPHITES.

THEIR DIFFERENT ACTION EXPLAINED.

"The phosphates in the animal economy are probably either the components of fully developed, and, consequently, *stationary* histological elements, or the result of *retrogressive* metamorphosis; they are, therefore, the *residue* of the molecular processes, which constitute the

phenomena of life, and are, so to speak, the *ashes* of the vital furnace. These ashes, which constitute what I propose calling the *phosphatic element*, are in part, if not in the main, produced by the oxidation or combustion of another phosphorus compound existing in the system, and which I propose should be distinguished from the former, by calling it the *phosphide element*. The latter, instead of being a residue or a component of fully grown, and, therefore, already decaying products, is one of the primary principles of all morphotic or germinal elements; it is, therefore, one of the essential conditions of all *pro*-gressive metamorphosis,—perhaps of all vital action.

"This broad distinction between these two biological elements—which had, until my researches upon the subject, almost entirely escaped the notice of physicians, and physiologists—will show at a glance that the views I profess with regard to the nature of tuberculosis, and the action of the *Hypophosphites* are very different from the admitted ideas as to the function of the *phosphates*, to which most persons are continually endeavoring to refer them. In spite of what I have published on the subject for twelve years past, many practitioners still prescribe the phosphates or phosphoric acid, under the idea that they are using my treatment, and occasionally these salts may be found to produce some slight effect from the fact that commercial phosphoric acid almost always contains a certain proportion of oxidizable phosphorus in the form of phosphorous acid."

Cause of Failure in Treatment.—"In cases where no improvement has shown itself within the lapse of time, I have mentioned (fortnight from time of commencing the Hypophosphite treatment) it will generally be found that this is owing to some one of the following causes:

Along with the Hypophosphites the patient is perhaps taking some other medicine or medicines, which counteract or destroy their effects.

Most of the drugs used against phthisis are altogether incompatible with the Hypophosphites.

For instance, if along with the Hypophosphites, the patient is taking alkalies or mineral waters, there will generally be a persistence or an increase of cough, of expectoration, of night sweats, and of fever.

If preparations of sulphur, or sulphuretted mineral waters are used with the Hypophosphites, there will often, beside these effects. be spitting of blood.

Narcotics, opiates and sedatives also produce a contrary effect to that of the Hypophosphites. They prevent the return of appetite, they bring on or increase night sweats. When, as is frequently the case, the patient has been under palliative treatment of this kind for some time previous to his taking the Hypophosphites, the action of the latter will generally be delayed thereby. When narcotics or sedatives have been used for the purpose of allaying harassing cough at night, it will frequently happen that their suppression will be attended with more or less distress to the patient. But it must be persisted in, if we wish to obtain the effects of the specific (Hypophosphite) treatment.

The same remark applies to the use of the large class of medicines included under the term of tonics, such as bitters, vegetable alkaloids, etc.

The presence in a mixture containing the Hypophosphites, of metallic salts, or of salts with excess of acids, or of free acids, will frequently bring about the decomposition or the oxidation of the salts of phosphorus, and thus modify or altogether destory their effect." (See remarks concerning the use of arsenic, iron, alcoholic drinks, cod liver oil, etc., page 61.

"Dr. Williams gives a formula in which he prescribes a Hypophosphite along with phosphoric acid. This simply serves to form a phosphate and to set free the hypophosphorous acid, the dangers of which in its uncombined state I have pointed out."

"What Not to Prescribe.—The following, which is a literal copy of a prescription by one of the leading London physicians, is a type of what the practitioner should most carefully *avoid:*

℞	Calcis Hypophos. - -	ʒ iss.
	Liq. Ferri Pernit. - - -	ʒ iij.
	Liq. Strychniæ, - -	ʒ j.
	Quiniæ Sulphatis, - - -	gr. xviij.
	Syrupi Aurantii Floris, -	℥ iss.
	Aquæ Aurantii Floris, - -	℥ vj.
	Aquæ Distillatæ, - -	℥ xij."

"We thus see that there exist a number of serious causes of error which should be carefully avoided, as they may easily be, when they are once pointed out."

"Complications.—When death takes place in cases treated by the Hypophosphites, it is due either to the pre-existing lesions, or to the occurrence of some secondary or accidental complication.

In no case after the employment of the Hypophosphites is death brought about by new tubercular deposit, unless the treatment is completely stopped while the patient is still exposed to the causes which produce tuberculosis." *Churchill.*

Iron.—"Iron and all its preparations should be most rigorously excluded, * * * except in some rare and exceptional cases."

Arsenic and Metallic Salts.—"Arsenic, which is frequently prescribed against phthisis, almost entirely destroys the beneficial action of the Hypophosphites. The same remark applies to all metallic salts in general.

Alcoholic Drinks.—All alcoholic stimulants, strong wines, and beer, which are so often prescribed in cases of consumption, produce similar effects. They prevent the return of strength, and bring on a recurrence or an aggravation of cough, fever and sleeplessness.

As their effect upon the system consists in a stimulation of the circulation and a diminution of oxidation, it is directly contrary to that of the Hypophosphites.

Their use is to be more especially deprecated whenever there is any acceleration of the circulation, either owing to hectic fever, or to intercurrent inflammation, whether this latter be accidental or dependent upon softening of the tubercular matter.

The patient must be restricted to the use, at most, of very weak claret and water; but it is even better to avoid fermented liquors altogether, and confine him to tea, coffee, milk, and slops of any kind.

Cod Liver Oil produces a somewhat similar effect to that of alcoholic stimulants. It disturbs digestion, interferes with the appetite; by its local action on the lungs it hinders the elimination of tubercular matter, favors the fatty degenerescence of tissue, to which the patient is already prone; diminishes oxidation, thus increasing, without any beneficial effect, the plethora, which the Hypophos-

phites themselves already tend to produce, and in this way frequently brings on formidable attacks of hæmorrhage." *Churchill.*

"Having now been in the habit of using the Hypophosphites pretty frequently during the past five years (1863 to 1868), I am able to say that my faith in their remedial power becomes more and more confirmed, while I recognize the fact that they require to be given with discrimination and care; otherwise, not only no benefit, but actual mischief, will result from their administration." *Dr. Thorowgood*, 1868.

In pithisis, Dr. Churchill recommends the Hypophosphites of Soda, Lime, and Quinine only. "I have investigated experimentally the action of a great number of Hypophosphites. * * * I found that in the treatment of phthisis the Hypophosphites of Lime, Soda, and Quinine should alone be used."

Speaking of Hypophosphite of Potassium, Dr. Thorowgood says: "As a remedy I do not often employ it; it must be used with great caution, being a powerful resolvent of condensed and consolidated lung tissue; and if tubercles are present, it may cause these to soften with a rapidity that may be dangerous and alarming."

Upon the same subject, Dr. Churchill says that it "usually produces an increase of expectoration, and symptoms indicating more active disintegration of the tubercular deposit. These phenomena are in accordance with the facts already known respecting the eliminative action of this base."

Since my discovery of their curative effects, I have had constant opportunity of observing their action in delicate children, born of consumptive parents, and I feel bound to state that I have never seen *one* single instance of such children becoming consumptive, when the remedy has been used in a proper manner.

"Independently of this fact, I have demonstrated experimentally that the Hypophosphites exert a special action in promoting the growth of children and young animals, and thus show themselves to be the direct antithesis of that peculiar condition of weakness and low vitality, which is one of the characteristic morbid features of the present physical constitution of most classes of the population."

Dangers of Salts of Potash and Ammonia.—"The salts of potash and ammonia are possessed of a special eliminative

action. * * * This explains why some practitioners, * * * by the injudicious use of them in consumption, have seen the disease all the more rapidly run its course to a fatal termination."

Danger of Combinations.—"For the same reason most of the uselessly complex formulas, * * * containing a jumble of Hypophosphites of different basis, are evidently likely to do as much harm as good." *Churchill.*

Permanency of Cure.—"From what I have seen of patients whom I have treated three or four years ago, the permanency of the cures has, in numerous instances, been so remarkable, that I have doubted as to whether I correctly noted the symptoms manifested by the patients when actually under treatment, and have questioned them as to their own recollection of their past symptoms." *Thorowgood.*

Inheritance in Young Persons.—"It must always be recollected, in the practical use of the Hypophosphites, that this sphere of action is to check the gradual invasion of the system by deposits of tubercle, and it is in the gradual development of phthisis in young growing people, coming of consumptive ancestors, where their remedial powers are most marked and most certain. This is a point on which my own experience enables me strongly to agree with Dr. Churchill. I may here remind my readers that these are the very cases in which something approaching as nearly as possible to a specific remedy is so much wanted. It is, therefore, for the purpose of arresting the deposition of tubercle, and of eradicating the tubercular diathesis, that we are to have recourse to the Hypophosphites; hence, to insure anything like success we must be careful and exact in our diagnosis. Very often I have seen active consumption in its third stage arrested by Hypophosphite of Lime, cavities existing becoming quiescent for months, or even years, and the general health improving greatly." *Thorowgood.*

Shortness of Breath.—"A phenomena often noticed and often referred to in these cases ('Consumption and Hypophosphites,' page 40, 2d Ed., London, 1868,) by the patients, in their great breathlessness; they feel well, they say, 'but for breath.' This harassing dyspnœa I have now recognized as one of the phenomena of phthisical

convalescence, when the destruction of lung tissue has been extensive." *Thorowgood.*

In Treating Phthisis:—

"First.—*Use chemically pure salts only.*

Second.—Administer them as indicated. *One salt at a time. Do not combine.*

Third.—Administer the Hypophosphite so as *slowly* to produce their physiogenic effects, and carefully watch that the action of the remedy does not enter the sphere of pathogenic phenomena. Should this occur, at once discontinue the remedy, and, after a few days, continue the medication in reduced doses.

Fourth.—Keep the patient under the physiogenic action of the remedy as long as may be necessary to obtain the elimination of the morbid deposit in the lung.

Fifth.—Combat by appropriate means the consecutive or accidental complications which exist or may show themselves during that time.

Sixth.—Confine the doses between one and seven grains per day. "Originally, I was in the habit of prescribing for men from five to fifteen grains daily. Longer experience has led me to reduce the dose. Instead of beginning with five grains a day and gradually increasing up to fifteen, I now usually begin with one grain a day, and seldom go beyond six or seven." *Churchill.* (See also remarks by Dr. L. De Bremon, page 105, this pamphlet.)

"When the local lesions have disappeared, or have cicatrized, the patient should continue to take one or two doses a week as a prophylactic.

The main principle to be followed is to keep the remedy within the physiogenic sphere of its action; to leave it off for a time if there should be any pathogenic effects; but in *no case, on that account, to abandon it altogether.*

CLASSIFICATION BY STAGES.

First, or crude stage.—Characterized by a modification of the percussion or auscultatory sounds, without the production of any abnormal signs.

Second, or period of softening.—By the presence of abnormal crepitus in lieu of the physiological respiratory murmur.

Third, or period of excavation.—By the existence of cavernous rales and sounds.

GRADUATED SCALE OF LESIONS.

First.—The diathesis with little or no deposit.

Second.—Confirmed deposit confined to a portion of one lung, and in the first stage.

Third.—Deposit in the second stage in one lung.

Fourth.—Deposit in the first stage in both lungs.

Fifth.—Deposit in the first stage in one lung, and in the second in the other.

Sixth.—Deposit in the second stage in both lungs.

Seventh.—The third stage; excavation, with only one lung affected.

Eighth.—Both lungs affected; one in the third, the other only in the first stage.

Ninth.—One lung in the third stage, one in the second.

Tenth.—The third stage in both lungs.

Eleventh.—Complications, such as diarrhœa, laryngitis, etc.

PHYSIOGENIC EFFECTS OF THE HYPOPHOSPHITES.

Nervous Energy.—One of the first effects produced by the Hypophosphites is a general increase of nervous energy, with an unusual feeling of ease and comfort.

Appetite.—The second effect is an increase of appetite, which sometimes becomes enormous; as a natural consequence of this fact, digestion is much improved, and the bowels also become more regular in their action.

Hæmatosis.—These phenomena are soon followed by increased activity of hæmatosis; * * * both the quantity and color of the blood are so rapidly increased that the Hypophosphites are undoubtedly the most powerful hæmatogens hitherto known.

Venous Plethora.—After a time, which varies with the constitution of the patient, and the doses given, there are evident signs of venous plethora, as shown in the color of the face, the redness of the mucous membrane of the lips and eyes, and the fullness of the superficial veins.

Sometimes this effect is so strongly marked that the persons who all their life-time have looked pale and delicate, put on the appearance of full and robust health.

When this stage has been fully reached, if blood be withdrawn from the patient, or be lost by accidental hæmorrhage, it will be found much darker than the natural state; so much so that the patient's attention is usually struck with this appearance. The same character is observed in the menstruation, which becomes easier, more abundant, and more regular.

Weight.—The patient *generally* gains in weight.

Growth.—If the subject be young, growth is notably excited, and children while taking the Hypophosphites, never show the signs of weakness and emaciation to which they are otherwise prone after too rapid development.

Teething of Children.—In the first teething of children, the Hypophosphite of Lime produces an *heroic* effect, and, if properly used, will act as a preservative against all the accidents of this difficult period of life.

PATHOGENIC EFFECTS.

Lassitude, Prostration.—When the Hypophosphites have been taken too long, or in too large doses, the first pathogenic effects generally show themselves in the nervous system.

Patients, who up to that time had felt a gradual or permanent increase of strength, begin to complain of weakness, perhaps of a feeling of lassitude, of vague or wandering pains in the limbs, of somnolence.

Sometimes lassitude may be carried as far as complete prostration.

Headache, Giddiness, Fever.—If allowed to proceed, it may be followed by headache or giddiness, disturbance of the eyesight, noises in the ears, and fever may finally supervene.

Indigestion, Loss of Appetite.—Digestive function is equally disturbed; appetite, before increased, may fall away or be lost.

Colic or Diarrhœa.—There may be colic or diarrhœa.

Hæmatosis.—All these signs which point to some disturbance of the nervous system, seem to be directly connected with an exag-

geration of the function of hæmatosis, and are accompanied or preceded by disturbance of the circulation. The breathing may become short and uneasy, there are pains in the chest, an aggravation of the cough and expectoration, and at this period ausculation frequently shows increase of the local signs, consequent upon augmented hyperæmia of the lungs. If, in spite of these symptoms, the use of the remedy is persevered in, hemorrhage takes place from the respiratory or the digestive mucous membrane.

Epistaxis and Hæmoptysis.—This generally makes its appearance in the shape of epistaxis, after which there may be an attack of hæmoptysis.

Intestinal Congestion or Hæmorrhage.—Some patients, after being kept a certain length of time in this pathogenic condition, find that they are affected with hemorrhoids for the first time, or that those which they formerly had, and which had disappeared, are reproduced. This may even go to the extent of real intestinal hæmorrhage.

Diet.—With regard to the patient's diet it will not be found necessary, while he is taking the Hypophosphites, to prescribe or to forbid any special kind of food, provided the digestive powers be unimpaired; otherwise it may become necessary to order some special regimen.

I find it far better to stimulate the patient's appetite by the variety of his diet."

Purity of the Remedy.—The *purity of these salts is an absolute necessity*, as their medicinal activity is very much lessened, and in many cases entirely prevented, by the impurities always found in the commercial salts and the preparations made from them.

Upon this point Churchill observes: "When I stated years ago that the non-success of some practitioners in the treatment of phthisis with the Hypophosphites was owing to their impurity, I only expressed the conclusion to which I had been led by experimental investigation.

I had found by repeated clinical experiments that, when a certain proportion of alkaline carbonates was added to the pure Hypophosphites, the physiological and therapeutical effects were manifested but slowly and incompletely, or failed altogether."

NOTE.—This proves how fallacious is the claim of those who openly advertise as an *advantage* that their compounds have an *alkaline reaction*. R. W. G.

"All physicians who have employed the Hypophosphites with success have pointed out the absolute necessity of employing them absolutely pure." *London Lancet.*

"I found the commercial Hypophosphite of Lime, as sold by the trade, to contain phosphite, phosphate, or carbonate." *Jansen, Repertoire de Clinic..*

"The Hypophosphite of Soda and Lime *must be perfectly pure;* this is one reason of the advantageous results attained by me. In the treatment of phthisis, the Hypophosphites must be used alone and without any other drug, unless we wish to destroy their effect." *Dr. Maestre,* Prof. Clin. Med., Univ. Granada, Spain.

"At least one-half of the failures in the use of Hypophosphites are owing to no other cause than their administration in combination with Cod Liver Oil." *Churchill.*

"I must say that I have only been completely successful when I was certain that the remedy was perfectly pure." *Dr. Parrigot,* Prof. Univ. Brussels.

"The Hypophosphites used by me were perfectly pure; and this is absolutely essential to success in their administration." *Dr. J. C. Thorowgood, M. R. C. P.,* London, and Phys. to London Hosp. for Diseases of Chest.

"All observers are now agreed that the remedies discovered by Dr. Churchill, have a special physiogenic action upon the system. I must confirm what has been stated by Dr. Churchill as to the absolute necessity of the Hypophosphites being perfectly pure."—"Trattamento delle Malattie del Petto col mezzo degl' Ipofosfiti, per il Dottor J. F. Churchill." *Dr. Fedeli,* Rome, Italy.

"I would wish to warn practitioners against the use of any drug whatsoever along with the Hypophosphites, unless it be for the express purpose of fulfilling some temporary and well defined indication.

Many cases of gastric disturbance, noticed by other observers, have been undoubtedly due to the impurity of the salts used.

The point of primary importance in the use of the Hypophosphites is their *chemical* purity." *Churchill.*

"Above all things, it is necessary that the medicine should be perfectly pure; so, I beg my brethren, before prescribing any salt

of the Hypophosphite, no matter what, to assure themselves of its purity." *L. DeBremon*, M. D., page 104.

"The Hypophosphites easily attract moisture from the atmosphere, and then combine with its oxygen, and are first transformed into a phosphite, and afterwards into a phosphate.

This is the reason why *no reliance* can be placed upon the hypophosphites as therapeutical agents, when kept for any length of time in the *state of salts*, and *still less* in solution." *Churchill.*

Preparations of Hypophosphites of Lime and Soda used by Dr. Churchill. "Are *always in the form of Syrups*, made from the recently prepared salt, chemically pure."

NOTE—These are also separate Syrups, viz.: Syrup of Hypophosphite of Lime and Syrup of Hypophosphite of Soda. R. W. G.

INDICATIONS OF THE DIFFERENT HYPOPHOPHITE SALTS.

Hypophosphites of Soda and Lime contrasted.—"Their therapeutical action is very similar; but the soda salt is rather the less active; the Hypophospite of Lime appears also to have a more direct effect on the expectoration, which it sometimes diminishes somewhat too rapidly, thereby causing an increase of cough. In that case it should be replaced by the salt of soda.

The lime salt should usually be preferred when there is diarrhœa, as also for children and pregnant women.

Hypophosphite of Quinia.—I have found the Hypophosphite of Quinia useful in the *incipient* diarrhœa of phthisis, in that of young children, and occasionally to modify the nature of the expectoration.

It is useful when the other salts may be found too active.

The quinine salt * * contains the smallest proportion of the active phosphide element.

This is one of the reasons why it will frequently be found useful in cases of intercurrent inflammation, and other compiications when the more powerful combinations (lime or soda) are found to be too active and stimulating, and why it should often be preferred, at least in the beginning of the treatment, for certain cases, such as very advanced phthisis, when the action is required to be small and slow.

Hypophosphite of Iron.—In the first edition of my work on consumption, I stated that the action of the Hypophosphite of Iron should only be tried with great caution in cases of consumption, as in several for which I had prescribed ferruginous preparations simultaneously with the Hypophosphite, their exhibition appeared to be followed by hæmoptysis or hæmorrhage in some shape or other. I also remarked that the association of iron with hypophosphorous acid appeared to me to be unlikely to prove of much utility as an antituberculous medicine, because a sufficient quantity of iron to saturate the ordinary dose of acid would probably be dangerous, and could certainly not be given continuously without accident. Subsequent experience has since fully confirmed these views. Not only was hæmorrhage produced in almost every instance in which I used the Hypophosphite of Iron, but in patients who have been previously taking ferruginous medicines, it will be found that it is very difficult at first, to keep the effects of the Hypophosphites within the limits of their physiogenic action.

But in cases of chlorosis and anæmia, as also of general debility, in female diseases, and in certain nervous disturbances it will be found far superior to all other ferruginous compounds.

Hypophosphite of Manganese.—Hypophosphite of Manganese acts in the same manner, but with much less energy. It has a special excitatory action upon the biliary secretion, and I have found it peculiarly useful, either alone or in conjunction with Hypophosphite of Quinine, in hepatic derangement, with deficient biliary secretion, subsequent upon prolonged residence in tropical climates, as also in cases of anæmia and general debility depending upon the same cause.

Phosphorus and the Hypophosphites Compared.—A dose of one grain of phosphorus in whatever menstruum (be it oil, ether, fat, resin or anything else) is a dangerous quantity, and if it should be taken once or twice with impunity, would, if repeated, kill the patient in a very few days.

Ten grains of the Hypophosphites of Lime or Soda, which are equivalent to respectively *three* and four grains of phosphorus, may be taken, not only without danger, but with evident advantage (*when there is no organic lesion*), for a considerable time, and doses of *forty-five grains of pure* Hypophosphite of Soda, prepared by my-

self, equivalent to *eighteen grains* of phosphorus, have been given by me without any deleterious effects.

The too prevalent idea that phthisis, *if curable by the Hypophosphites*, is to be cured by *any* of these salts, given in *any* dose or at *any* time, shows the low state of medicine as compared with that of really exact sciences.

Prognosis.—If ten consumptives be selected in such a state that there can be no doubt of the certainty of the diagnosis, and at such a stage of the disease that the pulmonary lesions shall be as little advanced as is compatible with such certainty, it is undeniable that no physician would pledge himself to cure a fixed proportion of them, or even any one single case selected beforehand, if he be debarred from the use of the Hypophosphites, or of some oxidizable compound of phosphorus.

With every other resource at his command, the utmost he could do would be to promise that the life of some of them might be prolonged; that one, or at most, two, might possibly escape, but without being able to tell who would be the fortunate exception, or who would prove victims to the disease.

On the other hand, if any number of patients be taken in the conditions above indicated and subjected to the use of the Hypophosphites *properly given*, nine out of ten of them ought to recover, the tenth case being allowed for errors of observation. So that the prognosis of a given case of phthisis, either treated by the ordinary means exclusive of the Hypophosphites, or left to the course of nature, depends not on the state of the patient, but on the *nature* of the disease itself, and is nearly always fatal; while the prognosis of the same disease under treatment by the Hypophosphites is *independent of the diathesis* or constitutional cause, and rests altogether on the extent of the pre-existing lesions, that is, on the destruction of lung tissue already produced, or on the presence or absence of complications.

Complications.—I now come to a very important point—that which relates to the influence which the existence or non-existence of complications exerts on the cure of phthisis by the Hypophosphites.

The complications of consumption are of two kinds; some are secondary or tertiary consequences of the disease itself and are

nearly sure to appear at certain stages of its development. Such are hæmoptysis, diarrhœa, amenorrhœa, vomiting, fatty degeneration of the liver, disease of the kidneys, etc.

Others are distinct diseases, co-existing with the principal complaint. Such are accidental intercurrent inflammation of the different parts of the respiratory apparatus, bronchitis, pleurisy, pneumonia, laryngitis. The first kind of complications may be called consecutive; the second, accidental.

Œdema.—Of the extremities, when not dependent on an accompanying affection of the heart, is always a very serious symptom in relation to phthisis, since it indicates the existence of a considerable mechanical obstacle to the circulation, due either to the extent of the lesion in the lungs, to fatty degeneration of the liver, to disease of the kidneys, or to embolic disease of the veins, and is usually indicative of a speedy, fatal termination. In four cases, however, I have seen the patients recover after well marked œdema.

Aphthæ, or Diphtheria.—Which are pathognomonic of a general failure of the nutritive function, are a still more fatal symptom than œdema.

Hæmoptysis.—In the prognosis of hæmoptysis a distinction should be drawn between the result of a given attack and that which depends on the hæmorrhagic tendency of a patient. The first varies with a number of circumstances which it would be too long to investigate here. The second case, namely: The existence of the hæmorrhagic predisposition, will render the prognosis less favorable than it might otherwise be, for two reasons: First, because the patient may be suddenly cut off by hæmorrhage, and next, because there will be need of greater caution in the use or the Hypophosphites.

Pyrogallic Acid in Hæmoptysis.—Since this was first written, in the year 1863, I have found a perfect specific for the arrest of hæmoptysis. This is pyrogallic acid, chemically pure, given either in one grain pills repeated every hour, or above all, administered as a spray in a solution of two grains to the ounce and repeated as occasion requires from time to time. Since 1863, that is for upwards of ten years, I have only lost two patients by hæmoptysis, while before that period I had the misfortune to lose several every year.

Vomiting.—Vomiting may depend upon two causes. At the beginning of the disease it is usually produced by the intensity of the cough and does not modify the prognosis, since, when this is favorable in other respects, the vomiting almost always disappears on the patient's improving, and no necessity exists for any special treatment.

When, however, the vomiting depends on the state of the digestive organs, the prognosis is less favorable, as it must be based not upon the simple existence of the symptom, but upon the whole morbid series, of which it is only one sign.

These vomitings usually produce great weakness, because they directly interfere with nutrition, and have been heretofore looked upon by pathologists of the anatomical school as dependent upon softening of the mucous membrane of the stomach. This is an error which I pointed out many years ago. The softening found on post-mortem examination in cases of this kind is an effect of cadaverous decomposition.

The vomiting is always proportionate to the violence and frequency of the cough, and disappears as soon as the latter is reduced to its *minimum* by the action of the Hypophosphites.

In some few cases, however, vomiting, or rather *nausea*, seems to be connected with renal or uterine complication.

Fever and Night Sweats.—Hectic fever and nocturnal ephidrosis are generally a consequence of the purulent resorption which takes place in the lung tissue. If the disease is recent, both symptoms usually disappear by the aid of the Hypophosphites alone, because they depend either upon the resorption of tubercular matter, or upon the general debility of the patient. When the disease is more advanced, when the tissues of the lung are deeply disorganized, and purulent secretion is fully established, perhaps by the formation of a pyogenic membrane, this result cannot be obtained, or can only be obtained very slowly by the Hypophosphites.

Diarrhœa.—Diarrhœa at the beginning or in the course of the disease, and not depending on ulceration of the intestines, nearly always yields to the action of the specific (Hypophosphite) alone, as is mostly the case in children, or to appropriate adjuvant remedies; it, therefore, calls for no modification of the prognosis. Yet, as this

is a point which is often very difficult to decide, the prognosis in such instances depends chiefly on the intensity, and the persistence of the complication, whatever be its cause, since this always produces a disturbance of nutrition.

When diarrhœa is present, the prognosis ought, therefore, to be given with great reserve, until we are sure of being able to combat it successfully.

Colliquative Diarrhœa is only one of the numerous symptoms of organic lesions involving nearly every part of the body, and is necessarily fatal. I have, however, more than once been called in consultation to a case of phthisis with colliquative diarrhœa, and all the concomitant symptoms of an expiring patient, and have been told by the attending physician that he thought it an *excellent opportunity for trying the effect of the Hypophosphites.*

Fatty Degenerescence of the Liver, when it has reached a certain extent, is also an unfavorable symptom, though I think it has not the importance which some pathologists have assigned to it.

Laryngitis.—The prognosis of phthisis complicated with *laryngitis* under ordinary treatment, is, as is well known, almost always fatal. Of all the complications of phthisis, this is perhaps the most formidable, and tubercular laryngitis has hitherto been looked upon as absolutely incurable. It was observed in ten patients out of seventy-nine. (Cases subsequently cited, page 75.)

There were four confirmatory (continued improvement during whole time of treatment) results, of which two were cures, and six negative results, including three deaths. In my *private* practice, the results with the Hypophosphites have been more favorable than this.

Amenorrhœa, which shows itself at the beginning of phthisis, not yet under the specific (Hypophosphite) treatment, is usually not of much importance, as it may then depend on the general condition, and on imperfect hæmatosis.

When it appears in the course of the specific (Hypophosphite) treatment, it may be produced by different causes, such as the breaking down of the pre-existing tubercular deposit, or intercurrent inflammation.

In such cases, it is always a bad sign, though not necessarily fatal.

THERAPEUTICAL EFFECTS OF THE HYPOPHOSPHITE TREATMENT, NOTED BY DR. CHURCHILL, IN SEVENTY-NINE PATIENTS IN THE SECOND STAGE OF PHTHISIS, TREATED AT HIS PUBLIC DISPENSARY, RUE LARREY, IN PARIS, DURING THE YEAR FROM DEC. 2, 1857, TO DEC. 2, 1858.

Fever.—Forty-four patients suffered from fever. In 24, the fever diminished; in 37, it disappeared, but only permanently in 16. Total number of cases influenced, 41 out of 44.

Night Sweats.—Night sweats were noted in 56 cases. They diminished in 9 and ceased in 44; but for 11 of these only for a time. For three patients the record is incomplete. Total number of cases influenced, 53 out of 56.

Loss of Appetite.—Fifty-two patients had lost their appetite. Improvement in 11 cases; complete return of appetite in 39 cases, which for seven of these was only temporary; record incomplete for two cases. Total number of cases influenced, 50 out of 52.

Vomiting.—Twenty-one patients complained of vomiting. Four improved; in 13 it disappeared, but afterwards returned for five out of that number, in one case the result was not noted. Total number of cases influenced, 17 out of 21.

Sleeplessness.—Thirty-six patients complained of want of sleep. In 15 cases there was an improvement; 17 cases recovered sound sleep, but 3 of these only for a time; for 4 cases the record is incomplete. Total number of cases influenced, 32 out of 36.

Dyspnœa.—Seventy patients complained of shortness of breath. In 25, the breathing improved; 38 recovered their natural wind, in 1 case this was only temporary; in 5 more cases the change was not noted. Total number of cases influenced, 63 out of 70.

Cough.—All the 79 patients had cough, there was an improvement in 43 cases; in 31 it ceased altogether, but in one of these afterwards returned; in one case the result is not stated. Total number of cases influenced, 74 out of 79.

Expectoration.—Expectoration was noted in 76 patients. There was an improvement in 39; it ceased altogether in 27, but in 5

of these afterwards returned; in 1 case no record of change was made. Total number of cases influenced, 66 out of 76.

Diarrhœa.—Ten patients were suffering from diarrhœa. It ceased in 8 cases. Total number of cases influenced, 8 out of 10.

Meustruation.—Dysmenorrhœa was noted in 6 cases. Two patients improved; in the four other cases the function was restored to its normal state, but for two of these only for a time. Total number of cases influenced, 6 out of 6.

Amenorrhœa.—Existed in eight cases, and in six the function was restored. Total number of cases influenced, 6 out of 8.

Strength.—As far as muscular power is concerned, 48 patients had been obliged to leave off work altogether; 27 were able to return to their occupations, but 4 only for a time. Total number of cases influenced, 27 out of 48.

The above is a summary of the symptomatic modifications produced by the use of the Hypophosphites.

Modifications of Symptoms Under Treatment.—In nearly every case, one or several of the morbid phenomena were diminished or modified, at least for a time, so that there was at least an improvement, even if only temporary, in almost every case.

The changes produced by the treatment in the percussion and auscultatory sounds may be of three different kinds; there may be a complete disappearance of the morbid sounds; there may be simply a decrease, or there may be a passage from one kind of morbid sound to another after an aggravation of greater or less duration.

In many cases the local signs which are pathognomonic of tuberculosis in the second degree, may disappear completely without leaving any trace behind, which authorizes the conclusion that this has been effected by resolution and absorption of the tubercular matter. Until my discovery of the Hypophosphites, this mode of cure had been observed so rarely in consumptives arrived at the period of softening, that most pathologists either denied or doubted its possibility. But there can be no doubt of the fact for those who have seen the curative action of the Hypophosphites. Out of the 79 cases to which reference has already been made, this occurred for 16 cases. But I have since then observed this result in thousands of instances. It will be found to have occurred in 7 of the 20 cases in

the third stage observed by myself, and which are given in Appendix III., Cases 1–24 (*Churchill's Work, 1875*).

In these cases one lung was in the third stage, and the other in the second stage; the latter organ was entirely restored to health. A similar result will be found in several of those which have been published by other observers, and which are given in the same appendix.

Sometimes, although recovery takes place, a portion of the lung, which had been the seat of the disease, remains indurated or consolidated.

There is probably either encystment, cretification, or incomplete elimination of the tubercular matter, or the lung tissues have permanently consolidated and indurated.

This result was noted in 6 cases of the 79 already referred to.

In another class of cases recovery only takes place after complete softening of the morbid deposit, with ulceration of the lung tissue involved, and the formation of an excavation. This occurred for 4 cases in the series of 79.

But in Appendix III. (*Churchill's Work*), will be found another series of twenty cases of the same kind, collected from my private practice, in the course of little more than two years of my first use of the Hypophosphites in Paris.

Although this mode of cure in consumption had been occasionally noted previously to the use of the Hypophosphites, it was of such rare occurrence that very few practitioners had been able to observe more than one or two cases in a long series of years.

With the use of the Hypophosphites this mode of termination is one of frequent occurrence. I am probably under the mark in saying that I have now observed *several hundred cases of this kind.* But in instances terminating in this way, as also in the preceding one by induration, the final condition of the patient may vary in different cases. In some there will be no general symptoms at all left, not even shortness of breath; the patient will be able to undergo as much, or nearly as much, exertion and fatigue as before. There may be no cough, no expectoration, and the patient may enjoy robust health, while even here, the pectoriloquy and cavernous breathing will give undeniable proof of the existence of a cicatrized excavation.

Condition of Cure.—In other instances the lung tissue, which has not been destroyed, may not have been so completely restored to its normal condition, or the cavity may be more extensive than in the former case; and then, although the arrest of the original disease may be as complete as in the former instance, though the tubercular diathesis—the *fons et origo mali*—may have entirely disappeared—though there may be no tendency to its recurrence, and consequently to a relapse, the patient's health may not be so completely restored as in the first instance, and may present every intermediate shade of difference between perfect ease and comfort, except during violent exertion, and a very unstable degree of well doing, where the amount of vital and organic activity remains very low, and where the patient is a sufferer from every external variation, and where the lungs are in a constant state of accidental congestion or inflammation. This state of things will be more or less strongly marked, according to the amount of lung tissue, which has been destroyed, or more or less damaged by the disease.

It will generally be found gradually to improve with proper care, and, above all, the avoidance of cold and exposure, particularly if the patient winters in a warm climate. This progressive condition usually lasts for two or three years, at the end of which period only, the patient may be said to have reached the full improvement of which his condition is susceptible.

Conditions of These Results.—The question now occurs, when are these several results obtained by the use of the Hypophosphites? Is it merely by chance—that is, owing to some undetermined cause—as in the cases of cure obtained by other means? No. It is in every case, *where the remedy is properly used*, and where the patients at the beginning of the treatment are in such a pathological condition that a cure is still possible.

What these conditions are has been already explained, and there is no undue assumption in saying that *the prognosis of no disease has hitherto been established upon a more accurate basis.*

I have shown that the primary condition for a cure depends upon the *extent of the tubercular deposit.* The second condition is the *degree of evolution which that deposit has already reached.* When that has not passed the *second degree*, and the disease is limited to *one lung*, a favor-

able prognosis may be laid down with almost *mathematical certainty.*

A third condition is the acute or chronic type of the complaint.

As regards the type of the disease, *i. e.*, its more or less rapid progress, the prognosis depends on the fact that the Hypophosphites have a specific antagonistic effect on the development of the disease.

The more rapid the progress, the more serious, *other things being equal,* will be the prognosis, since the greater in a given time will be the extent of the lesion.

An amount of disorganization, which in ordinary cases would have required several months, sometimes in an acute case takes place in an equal number of days. Still, the principle already laid down, viz., that it is the extent of the lesion, which determines the prognosis, applies as correctly to acute phthisis as it does to chronic. The acuteness of the disease, that is, the intensity of the general symptoms, has no influence on the efficacy of the treatment, *and this is a result of which no other treatment offers a single example;* for I am not aware that there is a single case of recovery from acute phthisis on record. I had, up to the year 1862, obtained this result in six instances, by the use of Hypophosphites, and since then have observed a number of others."

NOTE.—Dr. Churchill here draws a distinction between acute softening and acute tuberculization. Hitherto, this distinction would have been of no importance, but becomes of the greatest value if the Hypophosphites are the remedy for the latter, but not the former. R. W. G.

A fourth and last series of conditions depends upon the existence or non-existence of complications. In a word, the prognosis of a case of phthisis, when subjected to the *rational use of the specific treatment* (chemically pure Hypophosphites, exhibited as separate salts, in accord with his suggestions), depends almost entirely on the pathological state existing at that moment, and a cure may be expected in all cases where the organic disease is not already sufficient to produce death, either directly by itself, or by the consecutive disturbance caused by its natural evolution. These are the limits of all real science, because all real science can only be conditional. To ask for more would be absurd, to pretend to do more would be an imposture.

Necessity of Accurate Auscultation.—The importance of accurately determining the site, the extent and the degree of the

local lesion, in order to find a sure basis for prognosis, requires that a new view should be taken of the local diagnosis.

The full value of accurate auscultation now becomes apparent, and practitioners for the future, instead of simply auscultating a patient for the mere purpose of deciding whether he is or is not consumptive, must examine him with the same attention and minuteness as in a case of pneumonia, or pleurisy, or heart disease. Without the resource of the Hypophosphites, it is a matter of small moment to the patient and his friends to determine whether one or both lungs be involved, whether the deposit occupies a large or a small portion of these organs. The final result will in all cases be pretty much the same, and is merely a matter of time.

It often happens that in examining a case of phthisis the auscultator will diagnosticate the tubercular deposit as extending no further than where the lung gives signs of softening, while in reality, a much more considerable portion may be invaded by tubercles in the crude state to such a degree that the respiratory process going on is barely sufficient to maintain life, as shown by the amount of dyspnœa. This latest deposit of tubercular matter may sometimes be so far advanced that it must necessarily go on to softening, or this process may be set up by the slightest amount of intercurrent inflammation. Not only therefore must the examination of the chest be made with all the care and accuracy the practitioner is capable of, but his diagnosis of the extent of involved lung must be based not upon the physical signs alone, but also upon all the rational symptoms which can throw any light upon the subject. As in the diagnosis of the nature of the disease itself, so also in that of the amount of physical lesion, the only sure basis is the concordance of both the physical and the rational phenomena. It may sometimes happen that even an experienced and skillful physician, by taking account exclusively of the auscultatory signs, will think the local mischief is but slight, when it may already be very serious indeed—perhaps even hopeless. This will generally be indicated by the want of that proportion and concordance between the local signs and the intensity of the general symptoms, and, above all, the amount of difficulty of breathing which I have just mentioned. This is particularly applicable to cases of rapid tuberculization.

I have seen several cases of consumption where the most eminent auscultators have neglected accurately to state the extent of the local lesions in their diagnosis, even when given in writing.

Two such cases will be found fully reported at pages 620 and 621 of my French work (De la cause immediate de la Phthisie, etc., Paris, 1864).

The subject of the first of these cases was a Russian Prince, who is now living, and has been in the enjoyment of perfect health for upwards of fifteen years, thanks to the use of the Hypophosphites, and who, the day before he was placed under my care, had been examined by three of the most eminent physicians and auscultators, I may say not only in Paris, but in the whole world. There is not an auscultator of any fame in this country, who, like myself, has not sat at their feet, or at those of their disciples. One gave as his diagnosis—"softened tubercules at left apex;" another, "softened tubercles at right apex;" while the third stated, "softened tubercles at both apices." On examination, I found these three statements were all correct, and that, moreover, there were a certain number of tubercles disseminated throughout both lungs. Now, what was the cause of these discrepancies? Simply that these gentlemen thought it sufficient to establish the nature of the complaint, that neither of them supposed there could, at this stage, be any doubt as to the ultimate prognosis, and the two first deemed it useless to alarm the family any more than was absolutely necessary. The discovery of the specific of phthisis now enables the practitioner to make the fullest use of Laennec's wonderful invention and to lay down the prognosis of tubercular disease with an accuracy inferior to that of no other branch of medicine, or even of surgery itself.

Apparent Aggravation.—The reader must not suppose that the results above described are attained smoothly and uniformly in all cases; sometimes, as already mentioned, it is only after a temporary aggravation of the auscultatory signs that the lung is freed from the tubercular deposit. In these cases these signs will be often found to undergo a gradual and progressive transformation from above downwards, as if the lung were composed of different layers of diseased tissue exactly in the same order as we know the tubercular matter itself is deposited. For instance, moist or dry crepitus apex; lower

down there may be dullness on percussion, and as yet nothing more than peurile, or bronchial, or diminished respiration. The crepitus may disappear at the apex, be succeeded by natural breathing, and then be found lower down, where previously there were no signs of softening.

These in their turn may also disappear and again be reproduced for a while in a lower portion of the lung, so that for a time there may appear to be a local aggravation of the disease, although the patient is really on the high road to recovery.

The circumstances which appear most to favor a cure by resolution are the recentness of the deposit, the incipiency of softening, the freedom during the treatment from accidental intercurrent bronchitis, lastly, the youth of the patient. This last condition agrees with the well known fact that cavities are of a rare occurrence in young children.

When these conditions do not exist the softening of the deposit must go on, and a cure can only take place after the formation of a cavity.

Relapse.—What is the final value of the result obtained in a case of phthisis, when the lung has been completely healed, or when it has become cicatrized by the use of Hypophosphites? Is the patient safe, or is he at any time subject to a relapse? Several hundreds of patients who have been cured by me in the first or second stage by the process of absorption or elimination of the tubercular matter, and whom I have had an opportunity of examining since their recovery, have remained in perfect health by means of the occasional use of the Hypophosphites in prophylactic doses.

Of the patients who had only recovered with the persistence of a greater or less amount of disorganization in the lung tissue, all those who have come under my notice for the last seventeen years, and who have been able to take proper care of themselves, and to avoid exposure to cold and over fatigue, have continued for years to enjoy nearly the same amount of health, if not more, as immediately after their recovery.

Some have since died of other and altogether different diseases.

Where health has not been maintained and there has been any return of lung disease, the relapse has always been owing to local,

non-specific, non-tubercular inflammation (on this point I am particular), of a catarrhal or bronchial nature, induced by the weather or other external causes. The practitioner who has had but little or no experience in the use of the Hypophosphites, and still less faith in their efficacy, is often ready to mistake these accidental inflammatory complications for a recurrence of the disease and a recrudescence of the tubercular deposit.

The signs of accidental or incidental softening of tubercular matter, which was previously in a crude state, or else increased peritubercular hyperæmia, which is one of the conditions of resolution and resorption, are also sometimes mistaken for those of fresh tubercular deposit.

Occasionally accidental inflammation of incipient cicatrices, or of tissue that was only consolidated, or transient inflammation of new tissue, may equally be mistaken for a new tubercular deposit.

More extended experience, a due regard to the rational symptoms, and, above all, attentive stethoscopic examination, will, however, usually lead to a more correct opinion.

When the recovery is still recent, the stethoscopic signs, which may be those of congestion, bronchitis, or even of pleurisy, or pneumonia of different extent and intensity, usually occupy the seat of the primitive local lesion, and may thus mislead the inaccurate and inexperienced, above all, the prejudiced, practitioner.

I have seen several cases where accidental inflammation in an excavated lung, which had been cicatrized by the use of the Hypophosphites, has been mistaken for the very last stage of phthisis by the most distinguished physicians.

One of the most delicate points for the physician's decision is the true moment when it becomes advisable to resume the specific treatment after the occurrence of accidental inflammation.

I therefore confidently repeat the assertion I made many years ago, that as long as the patient is kept in a proper physiological condition by the prophylactic use of the Hypophosphites, according to the rules which will be given further on, I have never witnessed a recurrence of a fresh attack of tuberculosis. Now all practitioners who have seen a large number of consumptive cases, know how frequently this happens, particularly in children, when the treatment is

confined to the ordinary means, such as cod liver oil, tonics, etc. Even in the instances where, owing to the general condition of the patient, without any local signs in the lungs, there has only been a suspicion of phthisis, how often does it happen that after an apparent return to health, of greater or less duration, the disease shows itself a second time, too frequently in an unmistakable manner. The means which appear to have answered in the first instance are now seen to fail, and the disease runs its course to the fatal end.

These are the instances where the Hypophosphites again and again show their wonderful efficacy. I could relate any number of cases, observed at my dispensary at Paris, among poor and ill-fed children, where, whenever the Hypophosphites have been omitted beyond a certain length of time, the disease has reappeared, and has each time been arrested with the same success as at first. Such cases are true *experimenta crucis*, and demonstrate beyond doubt the specific action of the remedy.

CONCLUSIONS.

I.—"One of the characteristic phenomena produced by Hypophosphites in the system is the production of venous plethora.

II.—This plethora is the condition of their therapeutic action against phthisis.

III.—This therapeutic action must be limited to the physiogenic effects, which afford the measure by which we should be guided in the use of them.

IV.—Beyond this limit their medicinal effects are either transient or incomplete, and are not followed by a curative result, even with the co-existence of all other necessary conditions.

V.—The use of the Hypophosphites in too large doses, or for too prolonged a period, produces symptoms which I have called pathogenic, and is then apt to lead to accidental complications of variable degrees of intensity, which may bring on a fatal termination, owing to this mistake in treatment, even though the patient otherwise offers all the conditions necessary for a cure.

VI.—As happens for other cachexiæ, the local lesion, which is the result and the anatomical sign of the tubercular diathesis, when

once it has overpassed a certain limit, pursues the usual course of its evolution by virtue of conditions which are to a great extent independent of the initial morbid constitutional state.

VII.—The cure of the diathesis is not, therefore, necessarily and immediately followed by that of the lesion, although that of the lesion cannot be permanent unless it be attended or preceded by that of the diathetic condition.

VIII.—The recovery of a patient subjected to the Hypophosphite treatment will therefore depend upon the extent of the pre-existing local lesion; that is, of the gravity of the disorganization, which has taken place previous to treatment.

IX.—When the tubercular deposit has not gone beyond a certain stage of its natural evolution, it may be reabsorbed and entirely disappear. This re-absorption may take place not only when the tubercular matter is still in a crude state, but even when it has already reached the stage of softening.

X.—This second stage, of softening, is sometimes one of the phenomena intermediate between the therapeutic action of the Hypophosphites and their therapeutic effect. Sometimes it simply precedes the re-absorption of the morbid deposit, at other times it will go on to produce ulceration, destruction of the surrounding tissues, and finally consolidation or a cicatrized excavation.

XI.—The cure of phthisis by the Hypophosphites may therefore take place in two different ways, either by the disappearance of the local lesions, and by a cessation of the physical signs which indicate their presence, or by the persistence during a variable period of time of less extensive pulmonary disturbance, which, however, does not interfere, or only partially interferes, with the general health, and which does not predispose the patient to a recurrence of the original diathetic condition.

XII.—If during the persistence of the local signs in the lungs, the patient be kept in hygienic conditions proportionately adapted to the gravity of the persisting organic lesions; if he be maintained under the influence of the specific treatment at proper prophylactic doses; * * * the stethoscopic and plessimetric sounds will be found gradually to improve until they lose their pathognomic character, or even entirely disappear.

XIII.—Time is an indispensable element in the cure of a case of phthisis, and no other means can be substituted in its place.

XIV.—An overdose of the specific remedy, instead of hastening the patient's recovery, will often produce a contrary effect. The greater the extent, and the more advanced the stage of the pulmonary disease, the more important it is to keep this fact in view, because a contrary conduct will then, still more than at other times, produce accidental complications.

XV.—As in almost all cases of phthisis the tubercular deposit takes place gradually and invades successive portions of the lungs, there is always a greater or less lapse of time during which the local lesion is of secondary importance; *and until that point has been overpassed, every uncomplicated case of tubercular consumption may be cured with perfect certainty by the scientific use of the Hypophosphites.*

XVI.—Every practitioner who is called upon to treat a case of phthisis is therefore bound, not only for the sake of humanity, but by the rules of medical science, to have recourse *at once* to the Hypophosphites, instead of only using them as a last shift after the loss of irreparable tissue, and it may be of irreparable time wasted in administering drugs, which are notoriously of no effect.

XVII.—If the Hypophosphites be the specific of phthisis, they must *a fortiori* be its prophylactic or preservative remedy.

XVIII.—As when rationally administered they never produce any unfavorable effect, they should immediately be had recourse to in every doubtful case, or even when there is only a suspicion of consumption.

XIX.—All these conclusions are now confirmed by the independent testimony of physicians living in all parts of the world.

XX.—In no instance have they been controverted, when the observer has carried out his experiment with care, and *according to the rules laid down.* Physicians who had been unsuccessful in their first attempts, have in later efforts and after greater experience in the use of the remedy completely confirmed my views.

XXI.—The effect of the Hypophosphites on the tubercular constitution, depends upon a general action of the system, which at a future day will come to be recognized as of still greater importance than their effects in disease. In our present imperfect social state,

there is a constant tendency to increased disturbance of the conditions of normal nutrition, which is effectually combated by the use of the Hypophosphites as an occasional and temporary nutriment. This result can be obtained by no other means hitherto known, than the use of some one of the oxidizable phosphorus compounds, the best of which are the Hypophosphites.

XXII.—By means of *these therapeutical agents* the *functions of innervation or nerve power, of sanguification or blood-forming process, and of interstitial nutrition*, which are the *three primordial functions* in the animal system, may be kept or gradually raised to the very *highest degree of intensity*, of which the organic conditions of the subject will admit."

EXTRACTS FROM CHURCHILL'S VIEWS AS TO THE THEORY OF TUBERCULOSIS.

"So far, all the facts of pathological physiology known with regard to tuberculosis concur in showing that the special character of the diathesis is a decrease of molecular or intra-organic combustion, from which may be inferred all the abnormal phenomena depending on diminished oxidation as evinced in the functions of respiration, sanguification, urinary excretion and calorification. This is in complete accordance with the theory of phospholigy, viz., that in tuberculosis, the bioplasmic or proteic principles are incompletely oxidized, because they are deficient in their normal amount of the phosphide (*oxidizable* phosphorus) element, and are thus less combustible than in the healthy state."

"Tubercular matter is * * * bioplasmic albuminoid substance, imperfectly developed on account of it having undergone incomplete oxidation, not, as was supposed by Beddoes and McCormack, because there is a deficiency of oxygen, but because the materials themselves have lost their affinity for it, in consequence of a decrease in their phosphide (*oxidizable* phosphorus) element.

Color of the Blood.—It has long been a matter of observation by physicians, that the venous blood of consumptives is redder than in the natural condition.

Now we know that the black color of the venous blood depends upon the presence of carbonic acid, for, as Longet states, there can

be no doubt that the difference in color in the two kinds of blood in the veins, and in the arteries, is owing to the different proportions of oxygen and carbonic acid contained in the blood.

Experiments on the glands and muscles have shown that the blackness of venous blood is owing to its having been already employed in molecular metamorphosis; that the blackness is in proportion to the intensity of this molecular action, and that it increases or decreases with this intensity (Claude Bernard). We have just seen that redness is characteristic of venous blood of consumptives, and the use of the Hypophosphites darkens the color of the venous blood, not only up to, but beyond, its natural tint.

Urine.—The fact of diminished oxidation is also shown by the deposit in the urine of consumptive patients containing an excess of uric acid, with a corresponding decrease of urea (Becquerel; Ancell).

These urinary sediments usually diminish or disappear under the use of Hypophosphites. That this is due to an increase of oxidation will be apparent if we consider that the formula of uric acid is $C_5H_4N_2O_2HO$; while that of urea is $C_2H_4N_2,O_2$; so that, as Lehmann has shown, urea may be looked upon as formed by the partial or incomplete oxidation of two atoms of uric acid with formation of oxalic acid and allantoine.

This has been shown to be really the fact by Wohler and Frerichs, who have by direct experiments upon dogs and rabbits, found that uric acid was decomposed in the system in the same way as when oxidized directly by peroxide of lead, and that after its administration the urine of those animals shows an increase of urea and of oxalate of lime.

Calorification.—The lowering of the heat of the body in tubercular patients has been noticed by a number of observers, and has been specially studied by Bouchardat.

Sidney Ringer found that where there is an elevation of the temperature in phthisis it was only while the deposit was taking place, and has shown that it then constitutes a valuable diagnostic sign. Finlayson found that in tubercular children the temperature was higher in the evening, after the excitement and fatigue of the day; but in the morning rather below the average.

This decrease of heat accounts for the great sensitiveness to cold and atmospheric variations.

If we class the combustible elements of the system according to their heat equivalent, that is to say, according to the quantity of water which they can raise one degree in temperature by combining with the same quantity of oxygen we shall find that they rank in the following order (Gavarret):

Phosphorus 36.072, hydrogen 33.808, iron 33.072, carbon 23,696, sulphur 17.660.

Heat is both a result and a constant condition of all molecular actions which take place in living beings, and above all in animals. So that phosphorus, among all the oxidizable elements of the system, will raise highest the temperature of the combining bodies.

From what precedes, we shall be justified in inferring that of all the proximate principles in the animal system, those which contain the phosphide element, that is to say, phosphorus in an oxidizable condition, must have the greatest affinity for oxygen, and the greatest calorific capacity, and that they must influence more powerfully than any other compounds the two primary physical and chemical conditions of animal life, particularly among the warm-blooded animals—intra-organic combustion and the production of heat.

Scrofula.—What is the real connection between scrofula and pulmonary tuberculosis?—a question which has much worried pathologists and physicians in all ages.

The phospholigic theory again affords a satisfactory solution.

Organic materials must pass through a succession of metamorphoses, characterized by a gradual series of successive oxidations in the lungs, in the capillaries and in the lymphatics.

If this be the case, these successive oxidations must apply in turn to materials of decreasing combustibility.

If the phospholigy be very intense, the materials offered to hæmatosis in the lungs will be so refractory to oxidation that some of them will not be able to undergo even the initiatory stage of the process, and these will be at once deposited in the lungs in the form of tubercular matter.

If the phospholigy be less strongly marked, there will be sufficient oxidizable principles to provide for pulmonary combustion, and

a first degree of oxidation. But their affinity for oxygen will then be exhausted, and as they will be unable to undergo the subsequent oxidations required in the capillaries and in the lymphatic system, these are the points where oxidation will remain incomplete, and where the seconary deposit of tubercular matter will take place.

Scrofula is thus an incomplete and less intense form of tuberculosis than pulmonary phthisis affecting different histological elements."

NOTE.—The following is a summary of Dr. Churchill's argument, itself too lengthy to reproduce here, regarding the theory of tuberculosis. R. W. G.

DR. CHURCHILL ON HYPOPHOSPHITES IN OTHER DISEASES THAN PHTHISIS.

"I have found the Hypophosphites particularly useful in the following complaints, for most of which, my own experience has been confirmed by that of other observers.

All *adynamic conditions of the nervous system. Chronic myelitis.*

In these cases the Hypophosphites of Iron, Manganese, Lime, Potash, Quinia, and Baryta, will be found the most useful.

In diseases of hæmatosis, such as *chlorosis* and *anæmia* in all its forms.

In these cases the preference should be given to the Hypophosphite of Iron, Manganese, Quinia and Lime.

The most inveterate cases of anæmia will be found to yield to this treatment, and the Hypophosphite of Iron has this particular advantage over all other preparations of this metal, that in cases where tubercular anæmia exists and, as often occurs, has been mistaken for simple anæmia, it not only cures the blood disease, but wards off the effects of the constitutional predisposition, which as is well known, all other preparations of iron, have, on the contrary, a tendency to accelerate and aggravate.

In all diseases depending on *imperfect, incomplete, or retarded development*, the Hypophosphites not only bear off the palm from all other remedies, but will be found to succeed when no other has been of any avail.

Such for instance are *difficult* and *retarded dentition* in infants, *rickets*, *anæmia*, and weakness during *pregnancy*.

The Hypophosphite of Lime for infants, to which may be added, more especially for adults, those of Iron and Quinine, will be found in these instances best to fulfill the therapeutic indications.

In the difficult dentition of infants, I have seen cases where the little patient, reduced by suffering to the very last degree of emaciation, and either threatened or already attacked with convulsions, has been relieved in the course of a few days, sometimes with the very first dose, and very soon permanently cured by a few teaspoonfuls of Syrup of Hypophosphite of Lime. The whole apparatus of symptoms has literally been *swept away at once.*

In *chronic bronchitis* and in the *sequelæ of inflammatory diseases of the respiratory organs*, where there is debility depending upon anæmia and lowered nutrition, great benefit will frequently be derived from the use of the Hypophosphites, particularly the Hypophosphite of Potash.

A mixture of the Syrups of Hypophosphites of Potash and Soda, will frequently be found more useful than either separately. In some cases of *asthma*, where nutrition has become greatly imparied, the same benefit will be derived from the use of these medicines.

Dr. Gantillon, of Paris, in his work on "*Uterine Catarrh*,"[1868] states that in this complaint, he habitually prescribes the Hypophosphite of Iron, and after continuing it for a fortnight, changes it for the Hypophosphite of Manganese. "This alternation of medicines," says he, "is very beneficial, patients appear to be relieved by the change, and the use of the remedies may be continued for a longer time than with other preparations." *Churchill*, 1888.

From the *British Medical Journal*, October 17th, 1891, pp. 836-37. Extract from an address on "The use of Drugs in the Treatment of Early Phthisis," by J. C. Thorowgood, M. D., F. R. C. P. Senior Physician to the City of London Hospital for Diseases of the Chest, Victoria Park. Read in the section of Medicine at the Annual Meeting of the British Medical Association held in Bournemouth, July, 1891.

"It is in cases of catarrh at the lung apex, due to cold caught, or to respiration for some time of close vitiated air, that drug treatment appears to advantage. That peculiar catarrhal state of the apex, which has been described as pulmonary cachexia, and which is close on the borders of tubercle, and is due to a degenerated condition of the

epithelium from constant respiration of bad air, improves rapidly when the patient is removed to pure air, such as that of Bournemouth.

Where, however, we cannot give the patient the advantage of removal we have to do our best with drugs. Specially I would draw attention to the good results that may be obtained in such cases from the use of the Hypophosphites. The result of some twenty-five years experience in the use of the Hypophosphite Salts, has led me to the following conclusions based on records of cases:

Hospital out-patients who came with cough and expectoration, perhaps blood-stained at times, and who presented rales at the lung apex, continuing there after some amount of bronchitis due to cold had been overcome by various remedies, improved in a way that surprised me on giving them five grains of Hypophosphite of Soda three times a day. The patients got better, and some would return in perhaps six months' time with the same symptoms and signs again, and would again improve on the Hypophosphite treatment. In cases of persistent consolidation of lung after pneumonia, I have in very many cases seen absorption of effused products proceed speedily under treatment with Hypophosphite of Soda; this too, in cases where ordinary treatment had been followed to no purpose for some time. Cases of this description that appeared doomed to a speedy death by phthisis, I have seen clear up and recover perfectly on five grains of Hypophosphite of Sodium given three times daily for five or six weeks. In cases of pleurisy with effusion, the Hypophosphite Salts seemed to me to have no effect whatever.

In cases where the pleura appeared to have been roughened by deposit, so that friction sounds of loud and course character were very audible; I have seen all these sounds vanish and the patient do well under the Hypophosphite of Soda.

Before the days of tubercle bacillus I had learnt that there were cases of phthisis attended with fever, and rapid in progress in which the Hypophosphite failed in a way that I could not understand. I believe from more recent observation, that these were cases where the tubercle bacillus was too strong to be overcome by a medicine whose action lay mainly in promoting the absorption of inflammatory products.

Many years ago Dr. Graves, of Dublin, as well as Dr. Rush, of Philadelphia, and Dr. Munk, of London, laid stress on the use of

mercury as an absorbent in cases of phthisis. Mercury, says Graves, is of use where the affection of the lung is local and the system not affected.

In scrofulous pneumonia, rather than in tuberculous disease, the mercury is said to act with most advantage. How far this is true, I will not now stay to inquire; but the idea in giving mercury was to get rid of inflammatory deposit, and so prevent phthisis. We now say "get rid of inflammatory deposits, and so take away what may prove a nest for the growth of tubercle bacilli."

Whether it be phosphorus or a Hypophosphite that is given, I believe a process of fatty change and liquifaction of the effused product is set up and absorption follows. Sometimes the process seems to me for a time attended with some amount of increase of temperature, and when this is the case, it is well to reduce the dose of the drug, or give it at longer intervals. In recurring hæmoptysis, too, the Hypophosphite must be used with care. The most active in liquifacient power is Hypophosphite of Potash; and I remember a practitioner telling me he had given, as he said, the Hypophosphite of Soda, and it caused such a rapid breaking down of the lung, that he determined to have nothing more to do with Hypophosphites in phthisis. It turned out to be the Hypophosphite of Potash that he had been giving. The Lime Hypophosphite acts often remarkably well in cases where secretion is profuse.

The daughter of a medical man was cured of bad diarrhœa by Hypophosphite of Lime. The lime salt checks profuse sweating and also diarrhœa. The dose should not exceed five grains.

Very rarely indeed have I found when the Hypophosphite fails to remove an apex catarrh, or inflammatory deposit, that I have gained by changing to such medicines as tartarated antimony in very small dose, iodide of potassium, or some form of mercury. Once or twice a change of treatment has been eminently unsatisfactory; in one case clearly disastrous."

CLINICAL EXPERIENCES WITH THE HYPOPHOSPHITES.

PHTHISIS PULMONALIS AND ITS TREATMENT WITH HYPOPHOSPHITES.

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The Tubercular Diathesis Probably Depends on a Disturbance in the Hæmatosic Function.—Examination in Detail of the Organic and Inorganic Elements.—We believe that the tubercular diathesis can only depend on the disturbance of some one of the primordial functions of the economy.

In view of the solidarity that exists between all the parts of the organism, this disturbance should have for its initial point one essential condition, a modification of the hæmatosis.

The labors of pathologists, and especially of Andral and Gavaret, since confirmed by other observers, show that in phthisis, while the composition of the blood varies, there is no particular or distinctive character in the change that occurs in its organic elements; we are then led to believe that it must be among the inorganic elements that we are to find the special condition of the diathesis. But which one? There is the difficulty.

As the phenomena of this disease, considered in relation to those of some other dyscrasia, and especially to chlorosis, seem to show that they should be referred rather to the loss than the increase of some essential element, the question arises, which one is wanting?

Science possesses numerous facts proving the effect of most of these influences on the economy. Thus iron, sulphur, the chlorides, the alkalies, are of daily use. All, or nearly all, of them have been tried in the treatment of tuberculosis, and no one of them has shown a sufficiently marked or lasting effect to be able to attribute to it any real influence in this disease.

Now another element arrests our attention, viz., the phosphorus.

We know, in fact, that this element is one of the constant principles of the economy.

But our science is limited to that. Chemistry has not yet been able to demonstrate in what condition it exists in the blood; whether it is there as phosphoric acid or as phosphorus combined molecularly with organic matter, though Rees, in his work published in 1848, assigns it a part in the function of the globules.

The phosphates, and especially the phosphate of lime, have long been employed in rachitis.

Now to examine the facts.

Should this medicine have the immediate action on the disease which would belong to the element which is its starting point?

Now comes the element phosphorus, and if one reflects on the physiological effects of this substance as it is reported by Bayle in his Therapeutic Dictionary, it would seem that the stimulating properties which are attributed to it, that its action on the different morbid states of the system would make it a useful antagonist to phthisis.

If we admit that the phosphorized principle of the blood or organism is found there in any other state than that of phosphoric acid, it follows that it must play the part of an eminently combustible body, and capable at the same time of entering into molecular combination with the other elements of the organism in such a way as to become an integral part of it. But neither phosphoric acid nor phosphorus fulfills this condition. The first is already at its maximum of oxidation; the second, placed in contact with the liquids of the stomach or with the tissues, must, before being absorbed and rendered assimilable by the economy, be transformed either into phosphoric acid, or at least into hypophosphorous or phosphorous acid, the degree of oxidation immediately below that of phosphoric acid. In the first case the same effects are obtained as in employing phosphoric acid itself; in the second, supposing that the phosphorus, before being absorbed, should be transformed only into hypophosphorous acid, this latter must, in contact with the alkaline principles of the blood, be transformed or rather divided into two atoms of phosphoric acid and one atom of phosphorous acid:

$$P_3+O_{13}=2PO_5+PO_3$$

This last would fulfill the two conditions enunciated above, but with the disadvantage of only representing under the most favorable conditions but a third of the phosphorus taken into the stomach, the two-thirds transformed into phosphoric acid being lost for special action.

Besides, from this point of view the action on the economy of the various preparations of phosphorus depends on the quantity of substance which is formed in an oxidizable state at the moment of absorption.

This efficacy would vary with a crowd of circumstances impossible to foresee, such as the vehicle the remedy might be dissolved in, the age of the preparation, the nature of the substance with which it might come in contact in the digestive tube, the activity of absorption in the tube, etc., etc.

These conditions explain why preparations of phosphorus are so unreliable, and why on the one hand Coindet could obtain certain results in employing them in large doses, while on the other hand Bartez and Rillet, with weaker doses, could only arrive at negative results. If, then, we think that we thus have found the reason for these contradictions, we can logically establish the double hypothesis enunciated by Dr. J. F. Churchill, viz: "The tubercular diathesis depends on a diminution in the economy of the phosphorized element, and this element having to fulfill in it the function of a combustible body, it must be found there in a degree of oxidation inferior to PO_5."

The hypophosphorous acid, combined with a base, seems to me to be the most appropriate form, though, however, Orfila and Bevergei say that the toxic effect of phosphorus is due to its transformation into hypophosphorous and phosphorous acid.

An experience of many years has demonstrated to me that in spite of these opinions, the hypophosphorous acid is perfectly well borne without any toxic effect when combined with a base, as soda, lime, quinine, manganese, potassa, etc., etc.

So, then, if we confine ourselves strictly to the above expressed theory, we must conclude that the salts to employ are the *Hypophosphites*.

On the Mode of Action of the Hypophosphites.—On the Condition of their Curative Action.—Before indicating the mode of action of the remedies, we should briefly recall the different phases of the disease.

Phthisis and tubercular affections are due to the presence in the different organs of certain morbid products to which we give the name of tubercles, and whose anatomical character, visible to the naked eye, are now perfectly well known.

Neither microscopical research nor chemical analysis has succeeded in finding a constr[illegible]ognomonic element or composition in the tubercle.

Tubercles, once deposited, nearly always follow a regular evolution, in which we recognize generally three periods:

First.—Crudity.

Second.—Softening.

Third.—Ulceration or excavation.

In the period of crudity tubercles appear to influence the surrounding tissues only as foreign bodies, acting physically by their number, mass, and volume.

In the period of softening their effect is to modify the organic conditions of the surrounding tissues, producing in them a state of hyperæmia and even of local phlogosis, the result most frequently being the general phenomena which characterize the inflammatory state, and in addition, various troubles, either general or local, according to the location, nature, and function of the affected part.

The third period, which is the immediate consequence of the preceding one, results in the more or less extensive ulceration and destruction of the organ invaded by tubercular deposit.

Such is the inevitable progress of tubercles.

But in some cases the organism seems to desire to rid itself of the morbid product by a sort of intra-organic elimination, isolating it from the neighboring tissues by what has been called encystment or cretation; finally—sometimes, though very rarely—when tubercles have followed their rational evolution, the tissues in which they have produced ulceration and partial destruction, cicatrize or cover themselves with an accidental membrane of new formation (fibro-cellular membrane, fibroid inodular tissue.)

Now to the mode of action of the Hypophosphites.

It is twofold.

On the one hand they increase the principle, whatever it may be, which constitutes nervous power. On the other hand, they are blood-makers of the best kind, more rapid and powerful than any heretofore known.

The intimate connection observed between these two functions leads to the conclusion that the primitive action of these salts consists in stimulating some primordial condition of the general nutrition, a stimulation which they produce either by modifying the elements of hæmatosis, or by acting directly upon the nervous system of organic life.

Physiogenic Effects.—The physiogenic effects are an increase in the power of general innervation, fullness and color of the face, increased weight, etc., etc:

Pathogenic Effects.—The pathogenic effects are produced by a too long continued use or excessive doses of the medicine.

Patients whose cheeks had become full complain that they are getting thin, they complain of dull pains all over the body and especially in the limbs, of headache, vertigo, enfeebled vision, and sometimes of fever. The appetite, which previously had improved, is considerably diminished; and sometimes there is diarrhœa; clearly then there is exaggerated hæmatosis.

Auscultation sometimes reveals also, in this condition, signs of pulmonary engorgement; there is epistaxis, and often hæmoptysis.

So the fullness of the face will indicate the physiogenic effects, and epistaxis the commencing phase of the pathogenic phenomena.

Therapeutic Effects.—The therapeutic effects of a substance, being the result, as we believe, of its physiogenic and pathogenic effects, are of a more complex order, but in their turn are less complex than the curative result.

Each phenomenon of these divers orders requires for its manifestations some conditions more and more numerous, that is to say, more and more complex, and cure is the final expression.

So then, a phosphoric medication administered in a given measure, and for a sufficiently long time, will put an end to the tubercular diathesis. But this cessation without which a cure is impossible, is not the cure itself; it is only the primordial and specific condition.

Whilst the action of the medicine is identical in all cases, in that which regards the general affection there will be as a secondary effect a different result with each patient, according to the pre-existing lesion before its use.

As to the influence which the cessation of the diathesis will have on the local lesions; this, in the actual state of science, could not be established *a priori*. To know it we must have recourse to observation and assign it its true function, that of confirming or disproving conditions deduced from theory, and above all of establishing their limits; that is to say the conditions under which these deductions are verified. This will teach us that the treatment of a diathesis by its specific, influences organic lesions already established merely in an indirect way, their ulterior evolution being submitted to different conditions from those which give rise to them.

Thus, for example, mercury cures the syphilitic diathesis, but does it at once cause a necrosis, or a caries, produced by the venereal virus, to disappear?

Does it cause the pus formed by the suppuration of a lymphatic ganglion to be absorbed?

Certainly not; the diathesis once eliminated, it merely restores the abscess which pre-existed the treatment to the condition of any other phlegmon, and subjects it to the same rules of treatment.

Quinine, which prevents attacks of intermittent fever with a power that those who have not seen pernicious fevers in tropical climates can form no idea of—quinine, so heroic against the physiological troubles, is powerless against nearly all of the visceral lesions which result from it; and yet these very lesions, once established, cannot be, for the most part, successfully treated until the specific has put an end to the essential morbid state which produces them and which keeps them up.

Finally, vaccine for a longer or shorter time destroys in the economy an unknown condition, but essential to the development of small pox. It is powerless against the disease once established, that is to say, it prevents but does not cure it.

It is the same with the hypophosphites in phthisis; by the action of the phosphorus preparation on tuberculosis, the economy is brought back to its normal condition, from which all the organic disorders have sprung. But what influence can this return of the general equilibrium have on the local manifestations? What are the secondary circumstances necessary to effect a curative result? What are those which can hinder or retard the result?

This is what observation alone can teach us.

Supposing that one agrees with the author that phosphorus preparations are a specific against phthisis, it follows in no wise, as some practitioners seem to think, that the curative result should then be a very simple phenomenon, so simple that the first comer would bring it about with assurance and ease provided that he administered the Hypophosphite.

It would be so in fact, if the medication should be employed from the very outset of the disease, when the pulmonary disorders are insignificant and circumscribed; and this it is which logic, science, and humanity together demand.

Logic: because it is absurd to allow so fatal a disease as phthisis to progress, when there is a certain means of stopping it.

Science: because it is acknowledged that we have no other medicine capable of surely resisting this diathesis.

Humanity: because, even though he should not believe in the efficacy of the treatment, a physician should regard it as his duty to try it, in the acknowledged impotence of other medications.

We shall now endeavor to explain the conditions of the curative action of the Hypophosphites.

These conditions, as in all treatments, are of three kinds.

First.—Those that relate to the patient, which are the pathological conditions.

Second.—Those that belong to the medicine, as its chemical composition, its medicinal form, etc., etc.; these are the pharmacologic conditions.

Third.—Those that result from the action of the medicine on the patient; these are the therapeutic conditions.

The pathological state is determined by examination, the result of which is the diagnosis.

The pharmacologic condition will be made the subject of another chapter.

Of the therapeutic conditions we shall try to make as brief an explanation as befits this essay.

The rules ordinarily given to be followed in the administration of a medicine are often only a tissue of uncertainty and confusion. Not only is there no general principle which governs therapeutics as a whole, but if each medicine be taken in detail, nothing is more variable than the opinion of observers on the dose and mode of administration.

This arises from the fact, that the action of a drug is an eminently dynamic phenomenon, which itself depends on two elements, both variable, but one (the drug) varying with the will of the experimenter, the other (the organism) more often withdrawn from his influence. It is evident that a phenomenon, which is then a result of a relation established between two variable elements, one of which only is under one's control, cannot be produced in a constant form, until we find the law which governs the series of results produced by the different relations which we have created between the generating elements.

It is true that therapeutists make a distinction between the physiological action of a drug, and its therapeutic one; but this very distinction has been deduced not from its real relation between the medicine on the one hand, and the organism on the other; but from the normal or abnormal condition of the organism itself.

In reality it can only be, as we have just said, the result of two elements, one of which only is capable of being determined exactly in advance. Hence follows the method adopted always in therapeutics of seeing only between the phenomenon of disease and the idea of cure, but a single middle term. The administration of a drug in fixed doses, can only give results essentially varying and contradictory.

Thus, for example, it is laid down that doses must be fixed according to the age, sex, and morbid condition of the patient. It is also true in certain medicines, which distinguish what has been called the medicinal action of accidents which they may produce.

But in all this we find nothing exact, no general fact which may explain the medicinal action of every substance, no matter which. In one word, we have not yet understood the necessity of establishing an exact measure of medicinal action.

Can such a measure exist? and, if it exists, when shall we find it? We believe that it is to be found in the graduation of the very effects produced by the medicine.

Putting to one side the division heretofore admitted, let us look at the physiogenic and pathogenic effects of a medicine on the system which is in a state of health or disease.

The first consist in the increase or diminution of normal functions without passing their physiological limits, and consequently without the production of any morbid phenomena.

The second comprise all phenomena produced by the treatment other than those which exist in the normal condition. So long as there is only increase or diminution of function, its action is limited to the sphere of physiogenic phenomena. As soon as abnormal phenomena are manifested, it enters into that of pathogenic action.

Thus mercury, in proper alterative doses, produces only physiogenic phenomena. When the dose is increased, salivation occurs among other effects, indicating to the most careless observer that the pathogenic action has been attained.

Hydrocyanic acid, employed in the physiogenic dose, acts as a sedative; given in a larger quantity it produces, as pathogenic phenomena, nausea, respiratory trouble, headache, vertigo, and blindness.

These two sets of phenomena correspond; one, the physiogenic action, with the stimulus and the contra stimulus of the Rasorian school; the other, the pathogenic effects, with the action of the "Similia" of Hahnemann.

Thus, as the Rasorian teaches, every modification of the economy must consist either in an increase or diminution of the normal functions.

But the distinction thus established is inexact, and can only be a criterion, inasmuch as the change does not go beyond normal variations.

Besides, the pathogenic effects produced by medicines are true diseases, as the school of Hahnemann professes, and as was understood before it; but it in no wise follows, as this school pretends, that a medicine has no curative action unless its pathogenic effects resemble the disease against which it is employed—an error as grave as the entirely opposite one of the masses, who measure the efficacy of a medicine by the number and intensity of its pathogenic effects.

Pharmacological Conditions.—Above all things it is necessary that the medicine should be perfectly pure; so, I beg my brethren, before prescribing any salt of the hypophosphite, no matter what, to assure themselves of its purity.

I give Churchill's method of ascertaining the purity of the different salts:

"*Hypophosphite of Lime.*—"The presence of carbonate of lime is recognized when the hypophosphite, heated with distilled water, throws down a white deposit, soluble with effervescence in dilute nitric acid, forming thus a solution precipitated by oxalate of ammonia.

"*Hypophosphite of Soda.*—"Carbonate of soda, being insoluble in alcohol, its presence is determined by washing the hypophosphite with concentrated alcohol; there remains a white deposit, soluble with effervescence in acids, whose solution is not precipitated by oxalate of ammonium.

"To recognize the presence of free soda, we can make use of a salt of lead; for this purpose the hypophosphite is heated with concentrated alcohol. If the salt does not dissolve completely it is evaporated to dryness and the residuum taken off with distilled water. If the hypophosphite is pure, the aqueous solution thus obtained gives no precipitate by the addition of nitrate of lead to the sufficiently diluted liquid. If on the contrary, there is free soda present, we have a white precipitate of *hydrate of plombique.*

"Sulphide of sodium is recognized by the salts of lead, throwing down a black precipitate with an aqueous solution of the hypophosphite.

"The sulphate of sodium is met with in the hypophosphite prepared by double decomposition with sulphide of soda and hypophosphite of baryta. The latter salt is generally obtained by boiling a solution of bisulphide of barium with phosphorus, so long as any sulphohydric acid is given off:

$$\text{"}BaS_2+2HO+P=BaO,PO+2HS.$$

"But it is difficult to transform all the bisulphide into hypophosphite, so that by the addition of sulphate of soda we form a bisulphide of sodium, which is combined with the hypophosphite:

$$BaO,PO+NaO,SO_3=BaO,SO_3+NaO,PO.$$
$$BaS_2+NaO,SO_3=BaO,SO_3+NaS_2.\text{"}$$

We mention here only the two salts with which we are exclusively concerned in the treatment of phthisis.

Of the Different Causes and the Different Accidents which may Produce Phthisis.—In the first rank is inheritance.

It is by transmitting to their children special modifications of the economy, that parents give them the tubercular predisposition. This cause is so thoroughly recognized by all, that it needs only to be stated here.

Secondly—Accidental causes.

Some interesting researches made by Guy have demonstrated the influence of a deficiency of oxygen on the production of tubercles. He remarks that its development is intimately connected with want of space, and consequently with want of respirable air.

In the printing offices which he visited he noted the following facts:

In offices where the ratio of respirable air was under 500 cubic feet (English), the number of hæmoptoics was 12.5, and of catrrhals to 12.5 in a hundred.

When the volume of respirable air was from 500 to 600 cubic feet, the number of hæmoptoics fell to 4.35, that of catarrhals to 3.48 per cent.

Finally, when the amount of respirable air exceeded 600 cubic feet, the number of the first was but 3.96, and of the latter 1.98 per cent.

This crowding of individuals seems, then, to be an accidental cause sufficient to determine tuberculization in those already tainted with the tubercular diathesis; that is to say, those who in our point of view are deficient in the phosphorous element.

The great factories which contain hundreds of young girls, many of them of a lymphatic or scrofulous temperament, are the principal cause of the development of this terrible malady, which yearly carries off, in our good manufacturing cities, thousands of young girls, who, were it possible for them to be located where their lungs might find the necessary quantum of air, would not thus be a living holocaust, sacrificed to the *God of money*.

How many young girls, or young women too, who, to sacrifice to that other deity, *Fashion*, go to balls or parties scarcely clothed, and who, in going into the air, take at most no other precaution than that of carelessly knotting about the neck a lace handkerchief, which to them seems to be a sufficient guarantee against taking cold.

"Taking cold," with a subject affected with the diathesis, is evidently a cause of tuberculization, not only because it tends to diminish the intra-organic oxidation, already interfered with by the diathesic condition, but also because, to maintain the heat of the organism, the activity of the pulmonary function is increased, and a greater employment of the constituent elements of the nervous matter is required.

But we must always bear in mind that by the word cold, we mean the cooling really experienced by the organism, and not the simple atmospheric lowering of temperature.

Damp cold will act more energetically than dry cold, because damp being a better conductor of caloric than dry air, it will tend more powerfully to lower the temperature of the organism.

If, as Fossion says, the influence of cold has a direct action on the pulmonary tissue, it must act with more force on subjects having a tubercular predisposition.

Insufficient calorification is a constant phenomenon of the tubercular diathesis, but of itself it has a tendency to insufficient molecular reaction in the economy, which insufficiency in its turn depends on the absence of the phosphorous element, which is one of its principal originators.

Want of calorification in the tuberculous subject is then a secondary condition, an effect and not a cause.

Respiration.

The object of respiration being to bring organic matters into contact with the oxygen of the air, it is evident that in persons suffering from tubercular diathesis these matters will be incompletely oxidized, the result of their diminished affinity for this gas, and the incompletely oxidized products will be more abundant in proportion to the increased frequency of the respiratory act; because as the contact between the air and the successive and different materials to be oxidized is repeated, so much the more rapidly will the exchange between the pulmonary gases be effected, consequently the duration of the contact between the oxygen and the combustible matters contained in the lung will be diminished by reason of the frequency of the respiratory movements.

Everything, then, which hastens pulmonary action favors tuberculization.

Among women, according to Andral and Gavaret, menstruation is a sort of diverticulum to respiration; we can understand thus how amenorrhœa in diathesic subjects must be a cause of tuberculization, inasmuch as it increases pulmonary action.

Composition of Blood:

The composition of blood depends espeically on that of globules, whose functions according to all physiologists are most important, but of which we have not to a certainty determined, either their true chemical composition, the part of the system in which they originate, nor even the difference they present in the various regions of the circulatory system as regards their quality and composition. Nevertheless from all the

researches on this subject, whatever may be their difference on other points, there results this important fact, that their production in the system depends on two general conditions: the absorption of alimentary substances and the reaction of these matters with the oxygen introduced by respiration; in other words, the oxidation of assimilated substances; this oxidation evidently depending on the affinity between the oxidizable matter and the combustible principle.

Consequently every change of composition which diminishes this affinity will diminish by so much the activity of the organic reaction necessary to produce blood corpuscles.

Their diminution would then be an immediate and necessary consequence of the tubercular diathesis. Because on the one hand phosphorus is the most combustible principle of the economy, and on the other, according to the analyses of Rees, Reich, Gobley, and Percy, venous blood contains a phosphorous element, and especially according to the latter who—

"Finds it in the blood as a highly organized oleo-hypophosphite, having as one of its bases an active nitrogenous element, which element is oxidized by the contact of pulmonary oxygen, and appears in arterial blood as a phosphatic element."

If the diminution of the number of globules is a constant condition of tuberculosis, if their existence is necessary for the accomplishment of hæmatosis, how does it happen that their diminution in chlorosis, for example, does not produce by the insufficient hæmatosis and this incomplete oxidation, tubercular matter, which according, to the diathesic theory, should be its result?

According to the lights which we possess to resolve questions of this nature, the objection will disappear when we reflect on the different functions of the two elements, iron and phosphorus.

As we all know, according to the theory of Liebig, the function of iron is to absorb the oxygen in the lung, and to serve as a vehicle to carry it to the different parts of the system.

Phosphorus always following Rees and Reich, is oxidized in the lung immediately, at least in part, to pass from the condition of a *phosphitic* to that of a *phosphatic* element.

Besides, in chlorosis, though the globules are diminished in quantity, yet each one possesses substances having their normal affinity for oxygen, so that the organic metamorphoses which take place during the act of hæmatosis are fewer but not the less complete, so that the final result will be a variation in the quantity but not in the quality of the products resulting from the act of pulmonary respiration.

The theory of the tubercular diathesis explains, then, the decrease of the corpuscles of the blood in phthisis, and the relation which exists between tuberculosis and chlorotic anæmia.

Of the Different Medicines that have been Employed in Phthisis and of their Results.—These are innumerable, but no one of them has as yet brought about a certain cure.

It is generally admitted that 4 per cent, of tubercular cases are cured with or without medication.

We do not believe that any greater success has been obtained with any medicine heretofore employed (except with the phosphorous medication).

Most in vogue of all, and especially in England and in America, is cod liver oil.

First.—What action has this oil in phthisis?

Second.—Does it retard its progress?

Third.—Does it bring about a cure?

To these three observations we answer:

To the first: That in our opinion it has no direct action; it is only as a food that it can be useful.

To the second and third observations we answer categorically: *No!*

And here is one of the best proofs:

C. J. B. Williams, one of the first to employ and recommend cod liver oil in phthisis, the eminent practitioner, has established numerically and in a clear and definite manner, that in an experience of *twenty years* in the treatment of phthisis, "of *seven thousand* patients treated by cod liver oil, the number of cures did not reach *seventy*."*

That is to say, in that considerable number of patients, treated by one of the most able English physicians of our time, the number of cures did not attain *one per cent.*

This sad acknowledgement of the impotence of the remedy, stated officially, before the first medical society of England, has not met a single opponent, either in the medical press or elsewhere; and yet we see every day, thanks to the good old routine doctors who know, men whom the author recognizes as his masters, to whose decisions in many cases the medical world bows—we see, I say, these masters, in spite of the implicit avowal made by one of themselves, continue day after day, and in spite of all, to employ a medication which they know to be useless.

When we see a professor of the skill of F. Hughes Bennett explaining the action of cod liver oil (because he admits, with certain micrographers, that the primordial cell is composed of fatty and albuminoid nuclei, and comparing this idea with the fact observed by Ascheron, that if oil be shaken up with an albuminous solution, globules are formed, having the same composition, resting besides on the symptoms of emaciation in phthisical patients), conclude from it:

That fatty elements are wanting to constitute the nuclei of new corpuscles.

What shall we answer?

Do we not all know, as daily experience teaches us, that emaciation is not a condition but a consequence of the disease?

Finally, the most recent micrographic results on this subject show that the nucleus or the blastema, around which the cells form, is not composed of fat.†

Iodine:

For some time the action of cod liver oil was attempted to be explained by that of the iodine contained in it. But the action of iodine itself is completely negative against the tubercular diathesis.

Prof. Piorry himself, who had vaunted its efficacy recognized afterwards its uselessness. (Pathologie Iatrique," t. iv. p. 52.)

Conclusions.—The result of the ideas expressed in this work can be summed up in the following propositions:

First.—There exists in the system, as a constituent element of nervous matter, blood, the muscular organs, and, in general, of the albuminoid compounds, a phosphorous element not yet definitely isolated, and which is distinct from the now admitted *phosphatic element.*

Second.—As such, it constitutes one of the substances of the economy which has the greater affinity for oxygen, and as such, its probable function is not only to be oxidized itself, but also to promote combustion, and consequently, perhaps, to initiate organic metamorphoses in other substances.

Third.—The diminution of this phosphorous element in the system, whether as the result of its exhaustion or of a failure of reproduction, is one of the essential conditions of the tuberculous diathesis. In relation to the disease it plays a part of a direct or immediate cause.

Fourth.—The immediate effect of the existence of this condition is to diminish the degree of oxidization, to which certain matters in process of transformation reach; consequently, to render them unfit either to continue to fulfill their functions in the system, or to be eliminated from it in an excremental form.

Fifth.—The deposit of this abnormal matter under the form of proteic substances, incompletely developed and of variable composition, constitutes the different pathological

*Williams' Lumleian lecture before the London College of Physicians and Surgeons. (The *Lancet*, April, 1862).

†Micrographic Dictionary by Griffiths & Lanfrey. London, 1870, p. 125.

products known under the name of tubercle, and which are the anatomical characteristics of phthisis.

We will close in a few words.

We firmly believe that pulmonary phthisis is curable by an oxidizable and easily assimilated preparation of phosphorus, in all cases "*When the pre-existing lesion is not sufficiently serious to cause death*" (Churchill).

We give the preference to the Hypophosphites, as they seem to us to unite the best conditions.

As we generally cannot rely on any salts that are at our disposal in drug stores, the aim is to find a reliable preparation; and I will take the liberty of giving to the profession the result of my experience, after many trials of different preparations.

I have found only two that fulfill the necessary condition for good therapeutic effect, viz, *purity of the salts employed.*

Those to which I have given the preference, and the *only ones* that I exclusively employ,are the syrups of hypophosphite of soda and hypophosphite of lime, prepared by R. W. Gardner, chemist, New York City, and for the following reasons:

First.—The salt used is perfectly pure, and keeps entirely unoxidized in the syrup.

Second.—He alone has understood that the different salts have to be employed separately, according to the stage of the disease, hence his two different syrups—soda and lime.

Third.—Because after many tests, at different periods, I have found them always the same, and the therapeutic effects obtained invariably good.

In giving my preference to one preparatiion, when perfectly convinced of its constant purity, I have only followed Dr. Churchill's example, who has never employed any other preparation than that made by Swan, Rue Castiglione, Paris, after he had become convinced, by repeated trials, of its purity.

My reasons for not using other and combined preparations are twofold.

The first, and not the least, is because the *mixture of the two salts* is entirely objectionable, and ought not to be used in that form by any physician understanding the therapeutic effects of the medicine.

Dr. J. F. Churchill, the initiator of the treatment with hypophosphites, the greatest authority in this case, has sometimes *alternated* the two different salts with the same patient, according to the physiogenic or pathogenic symptoms produced by either, but *he never mixed them*, knowing too well that in many cases one or the other was contra-indicated.

The second reason is that the hypophosphite salts, as sold, are always impure, and require careful chemical treatment to deprive them of dangerous impurities, which so interfere with their therapeutic action as to always modify, and frequently abort the result for which they are given.

Another suggestion that I would offer to my professional brethren is that the doses that are recommended for general use are too large, and sometimes enormous, surpassing three times the doses that Churchill has given as a general limit to obtain good therapeutic effects.

My own experience of more than twenty years in the treatment of the disease corresponds entirely with his directions.

It is true that at the beginning large doses will work marvels, but it will soon be shown that they aggravate in place of curing, and in the end will do more harm than good.

The scope of this little work does not permit me to give cases that I have treated and cured or benefited by the syrups of hypophosphites; but later, as an appendix to it, and when the time will permit me, I will give a detailed record of more than one hundred and fifty cases that have been under my observation; but *never have I, nor will I, use a combination of the two salts.* In my opinion, and in my experience, they are more *injurious than beneficial.*

Make a careful observation of R. W. Gardner's syrups, employed separately and

according to the case in your hands, using the modified doses as herein suggested, and you will soon be convinced that while, *a priori*, the effects may not be so brilliant, yet the attainment of the end you have in view will be, at least, *sure*.

In a letter Dr. de Bremon gives his opinion upon doses as follows:

"Having had a very long experience in the use of Hypophosphites, and having carefully watched their effects in the treatment of phthisis, I take the liberty of giving you my views respecting the doses best adapted to the treatment of this disease. But while I differ with you in regard to doses, I must recognize that, as a chemist, you have done a great service to the medical profession. Your salts are pure; and the elimination by you of all impurities, many of them dangerous, has put in our hands preparations upon which we can rely for good therapeutic effects. But I consider it of great importance in this disease that certain doses should never be exceeded. I have observed that when given in certain definite quantities per day, the results are steadily and permanently favorable, though somewhat slow; but when the dose is increased beyond those limits, while the immediate effect is frequently surprisingly favorable, the ultimate result has been the production of certain pathogenic and physiognomic symptoms, epistaxis, and, frequently, hæmoptysis, owing to an excessive absorption of the remedy.

The salts to which I wish particularly to call attention, being those which I almost invariably use in this disease, are the salts of lime and soda.

Hypophosphite of Lime is generally used only in the second and third stages of the disease. This salt produces with much energy the undesirable results I have alluded to when pushed too far.

Hypophosphite of Soda is employed in the first stage of the disease; its effects are slower than the lime salt, but more sure when given in quantities of ten grains or fifty centigrammes per day; but in larger quantities it will produce the same effects as the lime salt, and instead of proving beneficial, will accelerate the process of softening by excessive activity.

I would therefore discriminate, when the lime or soda salts are used in phthisis, between adult males, adult females, children (males and females), and infants. The following doses are those which I have found to act the most favorably:

Adult males, 6 to 10 grains per day. Adult females, 4 to 8 grains per day. Children 7 to 15 years, 1 to 5 grains per day. Infants, 1-5 grain per day.

Now, as your syrups of these salts are each twenty grains to one fluid ounce, these quantities will be approximately met by the following quantities, viz:

Adult males, one teaspoonful, two to three times a day.

Adult females, one teaspoonful, two to three times a day.

Children, 7 to 15 years of age, ten to forty drops, three times a day.

Infants, two drops, three times a day.

Dr. Churchill himself has tried greater doses than the above, but having found it too much, has never since exceeded ten grains, or fifty centigrammes, per day. I would also allude to the necessity for physicians to watch for spermatorrhœa as a result of a too free use of these salts.

Hypophosphite of Iron.—The dose of this syrup mentioned by you (dessert spoonful) I consider normal, as it will be used by all competent physicians in cases where the combined action of phosphorus and iron is needed; for my part I have almost always been pleased with it in anæmia, chlorosis, and more especially in dysmenorrhœa, where the combined action of the two has a very direct influence upon menstruation.

Hypophosphite of Potassa.—As this salt is never employed in phthisis, and only for the resolution of old phlegmasias, the dose, one dessert spoonful (four grains), is good; nevertheless, it might be increased in the treatment of asthma to twenty and sometimes twenty-five grains per day, especially when the disease arises from chronic bronchitis, and no symptoms of tuberculosis exist.

I am glad to notice that you are making an elixir of Hypophosphite of Quinia; this is of great advantage in combatting intermittent fevers. It is used very effectually in the French colony of Algiers, and is given in nearly all military hospitals in preference to the sulphate, the doses required being less."

NOTE.—It should be remarked that the Hypophosphite preparations used in the following cases were those prepared by R. W. Gardner, New York.

THREE CASES OF PHTHISIS PULMONALIS,

TREATED SUCCESSFULLY WITH HYPOPHOSPHITES.

TYPICAL CASES SELECTED AT RANDOM TO ILLUSTRATE METHOD OF TREATMENT.

BY THE LATE L. DE BRÉMON, M. D., NEW YORK CITY.

(Reprinted from the *New England Medical Monthly*, May, 1882.)

Phthisis Pulmonalis in the First Degree.—Cure—Time of Treatment. Four Months.—CASE 1. Mrs. L., aged 32, residence, Brooklyn. This lady was advised by her physicians to spend some time in Germany, her native country, in the hope that the change of climate would stop a beginning phthisis pulmonalis. She was absent accordingly from May, 1879, until October, same year.

When she returned to America, there was no amelioration of her condition, on the contrary, her cough was more persistent, her appetite nearly gone, and she was much troubled with sleeplessness and night sweats.

I saw her at the latter end of October for the first time.

On examining her chest, I observed on the left side, in the supra and infraclavicular region, a well marked dull sound, and also a notable diminution of the respiratory murmur, with slight crepitation (crackling noises). In the rest of the side the breathing was generally exaggerated (overstrained.) Pulse 90; temperature 98⅘ at the time of the examination. Amenorrhœa and very profuse leucorrhœa.

The right lung was normal.

Diagnosis.—Dry tubercles at the upper extremity of the left lung.

Treatment.—Dessert spoonful of the syrup of Hypophosphite of Soda (five grains) twice a day at meal times.

A week later, I saw my patient again. Her cough is less troublesome, her appetite has increased, she sleeps better, and her night sweats less profuse. Same treatment.

In another week the amelioration was progressing without notable change. Same treatment for a fortnight.

At the end of this period my patient called. She told me that her appetite had augmented notably, her cough was decreasing rapidly, and night sweats nearly disappeared. Pulse 80; temperature normal. Same treatment for the next fortnight.

Two weeks afterward, I saw her again; her general state had greatly improved; she was growing more fleshy. On examination I ascertained a very marked diminution in the crepitations which I had at first observed, the breathing was less exaggerated; the dull sound, although weaker, still existed.

Same treatment for a fortnight.

At the end of this time the general condition was progressing, her cough had subsided, her appetite was good, and the night sweats had co[illegible]

Same treatment for the next month.

When my patient visited me again, her general appeara
plete change; her health was quite satisfactory, all the sy

disappeared; menstruation had become regular, although leucorrhœa still persisted, for which I ordered:

℞ Zinci sulph. pulv.; Acid Tannici, aa 3 ij.
M. Ft. chart. No. xvj.
One powder to be dissolved in one pint of tepid water, and taken by injection (per vaginam) morning and evening.

On examination, the chest on percussion sounded well; all dullness had disappeared.

On auscultation, I could find no more crepitation in the upper part, breathing had become normal, although a very slight noise was yet noticeable at the expiration.

I ordered the treatment to be continued as a prophylactic, and reduced the dose to one teaspoonful (2½ grains) of the syrup of Hypophosphite of Soda at each meal (breakfast and dinner). Five weeks later I saw my patient again. The general state of her health was as satisfactory as at the time of our last interview, and the slight noise noticeable at the time of expiration quoted above had entirely disappeared; no more leucorrhœa.

My patient was discharged cured, but as a prophylactic measure I told her to take one teaspoonful of syrup of Hypophosphite of Soda daily, and continue for a period of about six months.

I know that at the present moment Mrs. L. enjoys a perfect state of health.

Phthisis Pulmonalis in the Second Degree—Cure After Six Months, Treatment.—CASE II.—Mr. S., a resident of New York, æt. 19, came to see me. His medical adviser, who occupies a prominent and well-deserved position in this city, had told him that one of his lungs was badly diseased, and that he was of opinion that his patient be treated with cod liver oil and phosphate of lime, emulsified, for which he accordingly prescribed.

Mr. S. tried hard to follow the directions given, but each time his stomach rebelled, and finally rejected the medicine.

He was then sent to me.

He had complained for about eighteen months of a harsh, dry cough, and for two or three months he coughed a great deal before going to and rising from bed; had lost a good deal of strength, and was becoming very much emaciated; he thought his mother had died from consumption.

April 25, 1879—Cough every morning with expectoration of mucus, tinted with blood; night sweats; appetite sufficiently satisfactory; pulse 95; temperature 100½; the patient complained of a pain in the back, level with the angle of the right scapula, and a shortness of breath when walking.

On examination, I ascertained a well-marked dullness under the right clavicle over a space of about three centimetres.

The resonance of the left side was normal.

When I performed a rather deep percussion on the right side, my patient complained first of a sudden violent pain, and then fainted, which state lasted five minutes, his face turning pale and assuming an expression of terror, while thick drops of cold perspiration appeared on all its surface. I was compelled to put off my examination until the next day.

When I resumed it expiration was weak in the upper and fore part of the right lung.

The voice of my patient echoed, especially in the region under the right clavicle; on the left hand side, fore region, his respiration was exaggerated; on the right side, towards the rear, the resonance was much less powerful, and breathing very weak in the infra spinal fossa.

Level with the spine of the shoulder blade (épine de l'omoplate) I observed several crepitations of a humid character; in the rest of the lung, breathing was very faint, and the voice sounded very strong.

Treatment.—One dessertspoonful of the syrup of Hypophosphite of Lime (5 grains of the salt) at breakfast and dinner, daily, for eight days.

At the end of this period the night sweats had greatly subsided. Same treatment for eight days more.

On the 12th of May my patient was progressing favorably; he said he was less suffocated when walking. On the 19th, no change; general state was improving. On the 28th, on auscultation, I found that I could hear the expiration better in the right side, although the crepitation had not entirely disappeared and the voice was less sonorous.

To the right, under the clavicle and toward the external extremities of the latter, the resonance was somewhat less than on the left side.

In the fore region it was nearly equal on both sides; however, to the right the voice was a little more sonorous than to the left.

To the left, towards the rear, breathing was somewhat exaggerated; to the right, in the infra spinal fossa, I heard at intervals a few crepitations. In the rest of the lung it was normal. A faint echo was audible, however, level with the spine of the shoulder blade (épine de l'omoplate).

I reduced the dose of syrup (this time of soda) to one teaspoonful, morning and evening, and advised my patient to spend a month in the country.

When he returned to New York, in July, he felt all right; he was strong; no cough; no night sweats; no dyspnœa. All the general symptoms had vanished.

I ordered for two months more the treatment above described, as a prophylactic, viz., one teaspoonful of the syrup of the Hypophosphite of Soda (2½ grains).

Mr. S. came to see me later on, calling my attention to a slight touch of spermatorrhœa.

As to his recent state, he told me he had never given it a thought since, as he had nothing to complain of.

I have seen him since nearly every month in social relations, and his health is in perfect order.

Phthisis, First Stage, Turning to Second.—Three Months' Treatment.—Cure.—CASE III. Miss S., aged 19, born in New York. Expectoration, cough, night sweats, dyspnœa, nearly complete loss of appetite, emaciated, no sleep, palpitation, amenorrhœa. She had begun coughing about four months before.

The family physician had been sent for, had diagnosticated incipient tuberculosis, and had prescribed cod liver oil, cream and whiskey. This treatment had given no relief to Miss S.; her stomach rejected the oil.

I was then invited to see her, and the following were the symptoms: Complexion generally pale; cheeks somewhat red; emaciation considerable; prostration intense; expectoration not very abundant, somewhat pearly and mucous, and totally different from that caused by bronchitis.

Right lung in the fore region, to the right and in the upper part, the dullness on percussion was not very strong in the lung from its lower extremity up to the summit; breathing was weaker than on the left side; also several crepitations audible at its basis and right side.

At the rear, in the inferior portion, I ascertained the existence of very notable crepitations of a hurried character; these were very strong and increased at the time of coughing. To the left, both in the fore and rear region, the respiration was a little exaggerated.

Left lung perfectly healthy.

I prescribed syrup of the Hypophosphite of Lime one teaspoonful in the morning and one desert spoonful in the evening, at meals (about eight grains of the salt daily); added to this I prescribed a potion containing one-fourth grain of digitalis to the teaspoonful, in mucilage, to be taken only when palpitations were too troublesome.

This treatment commenced on the 8th of March, 1890.

I saw my patient on the 15th; her appetite was better, cough had decreased; night sweats less abundant, and respiration easier.

Same treatment during eight days.

On the 23d.—No change worth mentioning.

On the 29th.—Appetite restored; sleep quite satisfactory; no more palpitation.

Same treatment for one week, omitting the potion with the digitalis.

April 9th.—Progressing condition; hardly any more cough. I reduced the daily dose of syrup of the Hypophosphite (this time substituting soda for lime) to a teaspoonful morning and evening.

I was called April 13th.—Less satisfactory state; cough somewhat stronger. Miss S. confessed that she had imprudently gone out on a wet day and had her feet soaking wet.

I increased the daily dose to one dessert spoonful of syrup of Hypophosphite of Soda, morning and evening, for one week.

April 19th.—Patient better; no bad results from her imprudence; good appetite prevails; no night sweats and sleep satisfactory; reduced the dose of the syrup to a teaspoonful morning and evening.

April 26th.—Menstruation, which had been suspended, was recovered. Same treatment.

May 3d.—No alteration worth mentioning.

The examination which I performed then set forth the following evidence: All the general symptoms of the disease had disappeared; there was no more dullness; no more crepitation at the basis of the right lung, the respiration, however, was still somewhat weak at the front, under the clavicle; no bellows sound in the heart, but the "first sound" was still dead. Same treatment.

May 10th.—Progressing sanitary conditions; Miss S. begins to grow more fleshy, and was able to help her father in his business.

Same treatment.

May 17th.—On examining my patient, I could no longer discover any difference in the respiratory function on either side.

My patient told me that she felt very well.

I advised her family nevertheless to send her in the country, if possible, and to go on with the treatment as a prophylactic, viz.: one teaspoonful of syrup of Hypophosphite of Soda, daily for two months more.

In regard to the diagnosis in the present case, it would certainly, in some respects, be doubted; the crepitations, of a hurried character, were limited to the basis of the right lung, but there was, besides, in all the rest of this organ, a very great diminution of the respiratory murmur, without any hissing sound, or ronchus, and there was also dullness in its upper portion. The considerable anæmia, the night sweats so intense, and the cough and expectoration relatively so insignificant, could not, however, be attributed to plain bronchitis.

TWELVE CASES OF PHTHISIS PULMONALIS,

TREATED WITH HYPOPHOSPHITES.

By W. H. BENTLEY, M. D., LL. D., Cold Spring, Woodstock P. O., Ky.

(Reprinted from the *Med. Summary*, June, 1885.)

I have been engaged in the practice of medicine for more than a quarter of a century. During this period my efforts to manage disease and relieve my patients have been crowned with reasonable success, and been, as a rule, very satisfactory. This has not been the case, however, in the treatment of pulmonary consumption. In this disease, most of my patients succumbed. Cures were the exception, death the rule.

Even then my success was equal to that of any of my neighboring physicians in similar cases—better than that of many—yet I was not satisfied. I all the while felt that there should be, and really was a better method of treating the disease than I had pursued—better remedies than I had prescribed.

The trouble with me was, I did not know them, and did not know how I was to find them out. I sought information in all directions and from every supposed available source. I tried all the remedies and plans popular with the profession, but to lay them aside, leaving me disappointed and sometimes disgusted.

Under the stimulus of such names as F. Hughes Bennett and C. J. B. Williams, I stuck to that huge delusion, cod liver oil, carefully testing its therapeutic properties during a period of five years. This experience of cod liver oil in consumption of the lungs was sufficient. I never could find a good result from its use. On the contrary, its interference with digestion and appetite, and its tendency, likewise, to interfere with elimination of morbid matter, and to create fever and fatty degeneration, are sufficient, in my view to *positively* contraindicate it use. I never saw any good result from arsenic, and iron is nearly always mischievous. Alcoholic stimulants nearly always do harm, and the extract of malt rarely does good. Soured milk (koumis) is positively unworthy of notice.

After the brilliant results obtained by Dr. J. F. Churchill in the Parisian hospitals under the use of the Hypophosphites, it seemed that the key to the successful treatment of phthisis pulmonalis had at last been found. High hopes were engendered in the minds of physicians in regard to the treatment and cure of the disease. These hopes, however, were doomed to many disappointments. These disappointments arose from several different causes.

First.—Many manufacturing chemists, either through ignorance or through carelessness, failed to produce chemically pure salts, and the Hypophosphites to be available, must be absolutely chemically pure.

Second.—The Hypophosphites, as salts, are easily and rapidly injured by age. Nearly all the commercial Hypophosphites are worthless either from age or defective preparation. The writer recently tested eleven samples, purchased at random, all of which were found unfit for use.

To be suitable for exhibition in phthisis, the Hypophosphites should be entirely pure, and they should be incorporated into a syrup as soon as manufactured. Many of the syrups of the Hypophosphites on the market are prepared from imported salts for the sake of economy. In most cases, these salts, if ever pure, have deteriorated by age, hence the prescriber may look for disappointment.

Third.—Manufacturers have mostly furnished syrups composed of from two to half a dozen different Hypophosphite salts, and we physicians have frequently been so inconsiderate as to prescribe them. At any rate, I have, and I have known many other physicians to act equally as unwisely. We did not stop to consider the different actions of the various bases of these salts, as lime, potash, soda, iron, etc., upon the human system, and thus we prescribe a compound of heterogeneous and contradictory constituents, the constituents antagonizing one another. Yet, we would laugh at the fellow who would attempt to lift himself over the fence with the straps of his boots.

Fourth.—When the physician prescribed these preparations with due regard to the physiological effect of each, he was frequently unable, from the great distance intervening between him and his patient, to give the case the necessary attention. Thus, the prescribed dose might have been too small or, what is more usual, too large, or the patient might have an intercurrent attack of some other disease. The last category is quite frequent. One of the great elements of Dr. Churchill's success was due to his continued oversight of his cases, his patients being mostly in hospital. Prior to December, 1883, I had not entertained the views here expressed in regard to the Hypophosphites.

Through the winter of 1883–84 I devoted all my available time to the study of the disease, reviewing, with great care, the various theories respecting its etiology, pathology and treatment.

The result was a determination to thoroughly test the "Hypophosphite treatment." Dr. J. F. Churchill was the originator of this treatment, and it was on the plan pursued by him and his illustrious pupil, the late Dr. L. De Brémon, that I resolved to conduct my experiments.

I opened a correspondence with R. W. Gardner, pharmaceutical chemist, 158 William street, New York, and by April 1, 1884, was in possession of a liberal supply of his various chemically pure Hypophosphite syrups. With these I at once set to work. Before the close of the year (1884) I had treated twelve cases of known consumption of the lungs, mostly taken from the cases of other physicians.

Of this number four died and eight recovered.

These eight are all alive and well to-day (May, 1885). [Still so, November 25, 1885.]

Three of the cured cases were in the excavation stage.

I kept notes of all these cases and had written out a history of each to accompany this paper, but I find that these reports will fill a space twice the size of one number of the *Summary*, and hence, interesting as it might be to both the writer and the reader, the publication of this matter must be deferred.

I have still continued to use the remedies with equal success up to this time.

The results of my experiments may be briefly summed up as follows:

First.—Nearly all cases of phthisis pulmonalis can be cured by the Hypophosphites, if taken in time and properly managed.

Second.—But one of these salts (used in syrup) should be given at a time. By this I mean to say, never give a compound syrup, or other preparation containing more than one of these salts.

Third.—I have found but two of the salts, namely, the Hypophosphite of Lime and the Hypophosphite of Soda, necessary or even appropriate in phthisis.

Fourth.—Watch the cases closely, and be sure not to go beyond what Dr. Churchill calls the physiogenic action.

When symptoms of "overdosing" present, suspend the remedy for a few days, and resume in diminished doses.

Fifth.—Treat any complications that may arise according to indications."

November 8, 1885, the doctor writes: "Thus far I have treated thirty cases during this year (1885); twenty have gotten well and have been dismissed 'cured.' Eight of the remaining cases will get well; one, an old lady, æt. 69, will die, and another may die. I am sure the Hypophosphites are the proper medicines in consumption, but their use requires care and sound judgment."

November 28, 1885, the doctor writes: "In a communication to you under date November 8, 1885, I stated that I had treated thirty cases of consumption with your syrups of the Hypophosphites during the year; that twenty had been dismissed 'cured'; that eight of the remaining cases would get well; that an old lady aged 69 would die, and that another case might die."

Well, the old lady, Mrs. H., did die on the 15th inst, I considered her case incurable on my first visit, July 20, 1885. She was a tall, lean, thin and dark visaged old lady of highly nervous and excitable temperament, and had been confined to her room, and most of the time to her bed, for ten months. There was an entire absence of appetite; all she had eaten for some months had to be, as she expressed it, "forced down." In other words, she had no relish for food. She had diarrhœa, her food being passed in nearly the same state in which it had been swallowed. She had had several severe pulmonary hæmorrhages; her tongue was fiery red; there were exhausting night sweats; and her weak, thready pulse beat 150 a minute.

Ausculation revealed purulent cavities in both lungs, and her cough was almost continuous. She raised, from her lungs, large quantities of purulent matter. Her husband, a chaffy, conceited old fellow, who had read a part of Gunn's "Domestic Medicine," and, withal, had been an army hospital nurse, had been her physician. She had used gallons of whiskey and "bitters," to say nothing of Slocum's thirty dollar invoice of *his* miserable nostrum.

I prescribed Gardner's syrup, Hypophosphite of Lime before meals and Parke Davis & Co.'s Lactated Pepsin after meals. The patient rallied, and was able to be about the house. Late in October, she attempted to bring some dried fruit from a scaffold in the yard. This resulted in a fatigue and a severe "wetting," for a heavy rain fell during the time. She relapsed and gradually sank until death occurred, as stated, on the 15th of November.

The other patient, alluded to as the one that "may die," has so far recovered as to attend regularly to her household duties. She has nearly her usual strength, and has regained her normal weight with an addition, Her cough has also quite ceased.

This case is so remarkable that I desire to give you the details, which I wish you to incorporate in your forthcoming pamphlet, even at the expense of space.

Mrs. A., married, aged thirty-eight, is the mother of four children, the oldest twelve years old, the youngest four. Since the last birth, the mother has been in ill health, the first troubles being amenorrhœa and leucorrhœa. In January, 1884, she began to cough, the cough being more troublesome on retiring at night and arising in the morning. The expectoration was scant and a kind of "frothy mucus," as described. In March, 1884, she had hæmoptysis, afterward frequently repeated. Her father-in-law was a self constituted doctor, who had not even read "Gunn." He assumed charge or the case, and gave her gallons of whiskey bitters, the "roots and yerbs," as he called them, being a medley of nearly everything bitter and repulsive that the forest afforded. Of course this was wholly unavailing. In the winter of 1884-85 she fell in with the advertisement of some city sharper, who said, "I cure consumption," and got fleeced to the tune of forty dollars. Seeing that she grew rapidly worse under the use of this unscrupulous swindler's "stump water," or whatever it was, she abandoned its use. In March, 1885, she had an attack of intermittent fever in the regular daily "shaking ague" variety. She then called in an ignorant Swede, whose meagre medication was of the Homœpathic "persuasion." He treated the case, without benefit, until August 1, 1885. On that day I was called to the case.

I found about the following conditions:

Bowels extremely irritable, every morsel swallowed acting as rapidly as a brisk cathartic. Tongue fiery red and *creased* toward the base; tip sharp and pointed—thickened vertically; pulse 140, and quite weak. (Did not take temperature.) Daily "shake" from intermittent fever. The fever generally went off by a sweat about two o'clock P. M., and there was likewise a profuse colliquative sweat at night.

Leucorrhœa very profuse and extremely offensive, necessitating semi-daily change of linen; patient extremely weak—could not sit up alone.

Lungs.—Percussion sounds extremely dull—amounting to only a mere "thud." Ausculation: The breathing was chiefly bronchial, vesicular mumur nearly inaudible In left supra-mammary region, over a circular space about an inch in diameter, both inspiration and expiration gave a muffled blubbering sound, revealing a large abscess filled with pus. On the right, exactly corresponding in position, was a similar sound, covering a circular space the size of a silver dime. Over the left posterior surface there was bronchophony, and over the right, egophony. Expectoration was alarmingly profuse.

Pulmonary consumption in the excavation stage was my diagnosis in this branch of the case, and my prognosis was—"INCURABLE."

My first treatment was directed toward the intermittent, the indigestion, and the leucorrhœa, giving only an anodyne cough mixture for the lung trouble. By the end of the tenth day the three first were controlled, and I then gave my attention to the pulmonary difficulty. I prescribed Gardner's Syrup Hypophosphite of Lime, in dessertspoonful doses,* during the ensuing ten days, to be taken after meals—continu-

*While in the above case, dessertspoonful doses seemed to have worked well, it is much larger than Churchill recommends. It would be advisable to limit the dose to from one-half to one teaspoonful in such cases. R. W. G.

ing the cough mixture, so as to control violent paroxysms of coughing, to which she was subject. After ten days of this treatment, the doses of syrup were reduced to one-fourth. She improved continually and rapidly. I saw her on the 27th inst., November, 1885, and she is to all appearances well. Her appetite and digestion are both good, bowels regular, no cough, and her weight is greater by a few pounds than ever before.

She says: "I am not quite so strong as I was before my sickness, and I am a little short of breath in going up hill or up stairs." I give her words.

I feel that in placing your "chemically pure syrups" in the hands of the medical profession, you are a real benefactor, and I want to aid in bringing them into general use.

Dr. Aureliano Maestre, de St. Juan, *Prof. of Clinical Medicine, Univ. Grenada, Spain, gives the following as his conclusions, after testing the Hypophosphites in phthisis:*

First.—"The Hypophosphite of Soda or Lime *must be perfectly pure.* This is one of the causes of the advantageous results I have obtained.

Second.—The Hypophosphites must be given when tuberculosis is, so to speak, in an isolated state.

When it is complicated with an accidental inflammatory state of the respiratory apparatus, this treatment, as we have seen, aggravates the condition of the patient, In such cases it must be immediately omitted, *and again resumed as soon as the complication has disappeared.*

Third.—In the treatment of pulmonary phthisis the Hypophosphites should be given alone, and without any other pharmaceutical preparation, *otherwise their action will be impaired or prevented.*

Fourth.—The dose of Hypophsphites must not exceed a certain limit, beyond which they are likely to produce unfavorable results. The alkaline Hypophosphites are the best preparations hitherto known for the treatment of tubercular phthisis."

Dr. Parigot, *Prof. Univ. Brussels, says in "Journal de Médicine de Bruxelles."*

"I must say that I have only been completely successful when I was certain that the remedy was perfectly pure. * * * When the effects of the treatment have been once established, and the improvement of the patient has become well marked, I have often left off the use of the Hypophosphite of Lime for a few days, and have tried other modes of treatment, such as antimonials, opium, cod liver oil, either alone, or alternating with the Hypophosphites, but I have always been compelled to revert to the specific treatment, and have found the patients the better for my so doing.

So far the treatment has not failed me in a single case."

Dr. Reinvillier, Paris, ('*Courrier de Parie,*') says: "In the presence of the admitted inefficacy of all former modes of treatment, I wished to make my experiments according to the rules laid down by Dr. Churchill, and to my great joy, almost against my own expectation, I succeeded in my first two attempts."

Six months later the same author writes:

"Some months ago I mentioned the success I had obtained in the treatment of consumption by means of the alkaline Hypophosphites, and stated that I had undertaken a series of experiments upon a large scale, and would make known the results. I am now able to redeem that promise.

I have collected a large number of observations, some of cases treated by myself, the rest from the practice of other physicians, and I may state that the phosphorized treatment, has been found useful in almost every instance. Not only have consumptives been cured in the first period of the disease, but also a large number of those who have gone through all the stages of this terrible malady."

J. R. Fraker, M. D., *Marlboro, N. Y., under date of April 1, 1884, writes:* "Through your kindness I obtained one single bottle of your syrup of Hypophosphite of Lime, with the view of securing its effects upon a boy eighteen months old, who had the peculiar eruption and enlarged lymphatic glands from birth, which were entailed from tuberculous parents, and said to have resisted every effort at amendment both internal and external. On coming under my care, I forbad the use of all other remedies,

and began the use of syrup of Hypophosphite of Lime prepared at your laboratory in doses equivalent to half a grain of the salt, three times a day. Before the bottle was half used, the boy had lost the characteristic shiny, pinched and pale expression, his appetite returned, the drowsiness disappeared, and cell nutrition had so improved that the eruption gave way to the healthy appearing cicatrix. No untoward complications were suffered from its administraton, as might be apprehended from discutients in matastasis to the lungs, brain, peritoneum, or any cerous tissue. On the whole, I regard the Hypophosphite of Lime as among the most valued combinations of phosphorus."

On Oct. 8th, 1884, the same gentleman writes:—I will now add that I have had the Hypophosphite of Lime on trial since April, 1884, in numerous cases of lung difficulty, and in all, so far, have found it eminently satisfactory.

I am now using it in both acute and chronic pulmonary diseases, and where the lung is not broken down by intense ulceration and suppuration, and tuberculous matter, it seems to arrest the morbid process. I believe it to act as a powerful promoter fo tissue change, and when it fails to accomplish the restoration of the lung, it may be due to deficient excretion of waste products when the retention acts injuriously, poisoning the system through absorption. This indication might be met by a diuretic eliminator to aid its removal. With this, the power of tissue change would be increased, multiplying the products of meta-morphosis, which result from the oxidizing effect of the remedy, giving increased appetite and fresh nutriment for the tissue, and thus act as a true tonic.

Of the twenty-eight or thirty phosphorus compounds, I regard the Hypophosphite of Lime as decidedly the more efficient in its physiological effects. * * * * Hoping to give you many pleasant reports, I am yours, with many congratulations for your therapeutic success."

S. T. Lowrie, *Lore City, Ohio, May* 28, 1884, *writes:*

"I received a small pamphlet from you some few weeks ago, in regard to Dr. Churchill's modes of using Hypophosphites, and also in regard to the necessity for their purity, etc.

Having abandoned the use of Hypophosphite compounds as worse than useless in tubercular diseases, I nevertheless concluded to try your preparations.

The result has been so satisfactory that I am perfectly delighted over their use "

ARE HYPOPHOSPHITES OF VALUE IN TUBERCULOSIS?

By WILLIAM PORTER, A. M., M. D., St. Louis, Mo.

The discovery of the characteristic bacillus of tuberculosis and the acknowledgement of its importance as a factor in the progress of the disease, has led many practitioners into a mistake. Their error is this. They have concluded that, since tubercle is a specific disease, depending upon the presence of the bacillus, therefore to kill the bacillus is to cure the patient. Hence the long array of germicides and the different methods of introducing them into the system, some of them valuable, but not sufficiently so, to justify entire dependence upon any one or all of them.

Away back of the specific germ—long before the bacillus has had the opportunity to invade and multiply in the tissues, we have a letting down of vital force—a depreciation of the power of resistance, or, as we are now told, a cell deterioration. I fully agree with Cohen, that, "The condition which makes the human tissues a receptive 'soil,' a favorable 'culture medium' for the tubercle bacillus—that condition which of old was called 'diathesis,' and now 'susceptibility,' is itself a disease, a departure from the norm; and I believe it to be the most important element in the morbid complexus,

termed tuberculosis. It is the element requiring the greatest care in prophylaxis, the most intelligent and faithful treatment. Independently of the invasion of the microbes associated with tuberculosis, there is a disease to be treated, and if this disease be successfully treated, the microbes will come and go harmlessly."

Jaccoud has condensed the idea of this physical degeneration—or defective nutrition into one word, "hypotrophy," "a defect in the constructive or tissue building powers of the system." Upon its recognition much depends. Certainly to antagonize the specific germ and ignore the fact that the tissues are in a receptive condition for a new invasion is a poor practice—yet we believe, a practice that is earnestly followed by some.

Dennison, in a paper in a recent number of the *Philadelphia Medical News*, while advocating the use of tuberculin, insists that the action of the healthy living cell, is in exact harmony with the tuberculin, and that one directly antagonizes the bacilli—the other prevents their reproduction and effects repair.

Without fear of contradiction, it may be asserted that tissue building—the establishing of healthy cell life—is the foundation treatment of every case of tuberculosis, not only in the incipiency, but in the advanced stages as well.

This proposition is not antagonistic to the germ theory; rather has the knowledge of the existence and important role of the bacillus, led us to a better understanding of the necessity of proper nutrition.

Nutrition is a *sine qua non* in all cases of tuberculosis. In some cases its necessity is more evident than in others; in acute cases, other needs may be more urgent, but the rule holds good, the tuberculous must be nourished. In "thin living and thick dying" we find tuberculosis a connecting link. Many accept this theoretically, but put it in practice but poorly.

Feeding is not nutrition. The best of diet may not be assimilated—may do harm rather than good. The practice of stuffing, so honestly advocated by some authors not long ago, has been rapidly abandoned. Years ago every case of phthisis got a bottle of cod liver oil; now it is given only to selected cases. Nutrients are chosen which can be appropriated and food is given in such a manner and of such kinds as may easily induce complete assimilation.

There must be a demand for nutrition before assimilation can be satisfactorily performed. There must be the ability to appropriate food that is taken, else the defective cell in a remote part of the system will profit little thereby. Just here, I believe is an important point in the treatment of tuberculosis. The best of food and the most reliable nutrients are taken, and still the waste in many cases goes on. There is either want of assimilation or a want of gain from the process.

There is need for "respiratory food" as well as that in the alimentary tract. Oxygen must be taken into the system and the cells empowered to use it in the nutritive changes which we aim to accomplish by proper feeding. Deep breathing—pneumatic devices, and the inhalation of oxygen may do much to support this element of nutrition, but not infrequently the system seems as unable to appropriate oxygen as it is to utilize the food which passes through the stomach and intestines. Whether the lessening of tissue oxidation is due to a diminution of oxidizable phosphorus [Churchill], or to cell change, or to some other cause, the lessening of nervous energy is certainly a factor in the hindrance of oxidation and consequently of assimilation. Indeed, some authors (Holland and others) claim that pulmonary consumption is a neurosis. At any rate, if oxygen gets no farther than the alimentary tract, there can be no assimilation, no building up and tearing down, no hindrance of destructive change and repair of injury.

To meet the conditions clearly indicated by poor assimilation and loss of energy so often found even in incipient tuberculosis, and for the reasons suggested above, I formerly prescribed one or another of the several preparations of the Hypophosphites. In some instances the result was good, and in others I was disappointed. My experience led me to believe that the Hypophosphites as ordinarily used, did not constitute a very reliable remedy.

I am now sure I made a mistake. For two years I have been using the *single* salts, chemically pure, as prepared by Mr. R. W. Gardner, and am convinced of this —that while oftentimes in non-tubercular cases, the different salts may be given together for tonic effect, their combination should be avoided in phthisis. Quoting from "Hare's Therapeutics, Vol. 1, p. 847:" "The Hypophosphites of Lime and Soda are of service (in tuberculosis) as general tonics. The various wonderful complex proprietary Hypophosphites are less useful."

I would go further than this and use the Hypophosphite of Soda alone in cases where a direct tonic is needed, especially if the expectoration is tenacious. In combination with a suitable nutrient, it is especially applicable where there is destructive change going on in the lung. I have failed to notice increased temperature or excita bility from the administration of this salt, a result not infrequent when the compound salts are given.

Where the expectoration is very free and exhausting, I have fancied that it was lessened when the lime salt was substituted for the soda. Be this as it may, it is well recommended to use the Hypophosphite of Soda for tonic effect, where the expectoration is not too free, and to replace it by the lime salt if the expectoration is excessive. The indications for the other salts are equally plain. The Hypophosphite of Potassium, where a tonic resolvent effect is wanted, but it must be remembered that in phthisis, rapid resolution is sometimes dangerous. The Hypophosphites of Iron or of Manganese may be safely used in incipient cases, especially where there is marked anæmia.

I endorse the proposition made by many authors, that the Hypophosphites are valuable aids to oxidation and assimilation in tuberculosis, but submit that one salt when properly selected, accomplishes more than when a combination is used, in addition to which it is safer and its use more rational. I might cite a number of cases from my note book confirming the conclusions above given; indeed, these conclusions have been made from the evidence offered by these cases. They must be taken for what they are worth. To me they suggest a better method of administering a class of remedies of known merit and in general use.

NOTES OF A CASE OF INCIPIENT PHTHISIS SUCCESSFULLY TREATED WITH GARDNER'S SYRUPS OF HYPOPHOSPHITES.

By MALCOLM GRAHAM, M. D., Jonesville, Mich.

Mrs. B. American, aged thirty years, mother of several children—has gradually failed in health since the birth of her last child. Has a bad cough, night sweats and entire loss of appetite; has lost many pounds in flesh. There is some dullness at apex of right lung. The liver is three fingers wide, and there is constipation alternating with diarrhœa.

I immediately put her on Gardner's syrups of Hypophosphites, with such intercurrent remedies as the system demanded.

There was an immediate change for the better. The first improvement noticed was in her cough, then her appetite increased and there was no more loathing of food. In a short time she had ceased to sweat at night. Indeed, there was such a steady and permanent improvement in this, and in similar cases treated since, that I feel it my duty to recommend these Hypophosphite syrups in all cases of consumption, but especially in the incipient stage.

Let me speak of the further use of these syrups of Hypophosphites in coughs, not ordinary coughs, but those racking, nervous ones, with little or no expectoration,

except early in the morning. They upset the patient's stomach, spoil his sleep and are the *bete noir* of the medical profession—at least I have found them so until I used Gardner's syrups of Hypophosphites.

July 5, 1890.

PHTHISIS.

BY J. C. WILSON, M. D., MORLEY, N. Y.

I must say that I am greatly pleased with results obtained from treatment of a number of cases of phthisis with your syrups of Hypophosphite of Soda and Hypophosphite of Lime.

Several cases of phthisis in first stage have come under my observation in the past few months, and in every case there has been no failure as far as I could learn; and, at any rate, there was so great improvement at once that most of them went from my care apparently cured.

"Was called to attend Mrs. L——— in premature child-birth January 26th.

Had never seen this woman before; was requested to examine her lungs on February 1st. At this time she was greatly emaciated, had an exceedingly bad cough, no appetite, with sleepless nights on account of cough. She told me that she had been coughing for over a year, and had gone through the usual treatment for phthisis and been "given up" by several physicians. My examination showed excavation occupying nearly the whole left lung, slight dullness over and just below right clavicle, other signs normal in right lung.

At this time, February 1st, there was, as mentioned, extreme emaciation, profuse expectoration of a muco-purulent character, no rigors or night sweats, some fever with loss of appetite and extreme prostration.

One-eighth grain doses of morphia at night were given at this time, which allowed some rest from the harassing cough. Hypophosphite of Soda (Gardner's syrup) was commenced in dessertspoonful doses three times a day.

February 9th—Considerable improvement in strength of patient, but no gain of appetite, and the morphia was taken away from her this day. Patient passed two dreadful nights, but on the third day appetite returned, and she has had a good one ever since, to date, June 26th.

February 14th—Says cough and expectoration are less, a little stronger, able to sit up in a chair for an hour or two, sleeps well and appetite good; treatment same.

February 20th—She says she feels stronger, but sees no change otherwise; cough and expectoration same as at last visit.

February 26th—No change in symptoms, and this day the syrup Hypophosphite of Lime was substituted for the Soda, dessertspoonful doses.

March 1st—Found her in a greatly improved condition as to strength; able to sit up all day, with strength to take considerable exercise about the house; cough and expectoration much less, no great gain in weight.

April 1st—Seems to have been a steady gain since last visit in all symptoms except no increase in weight. Treatment, Hypophosphite of Lime (Gardner's syrup) one teaspoonful three times a day.

June 26th—Examination of lungs to-day shows continued excavation of left lung, no abnormal signs about right lung, all dullness having disappeared.

Results of Treatment.—Nearly entire cessation of general symptoms, though from her being from a child frail, we could not hope to make a strong woman of her. She now goes some distance away, so that she will be out of my observation for some time. She is directed to continue same treatment, viz., teaspoonful doses of syrup of Hypophosphite of Lime three times a day.

She has within the last two weeks gained several pounds in weight and has some courage, the lack of which has been a sad drawback all through the treatment of the case."

October 29, 1891, Dr. Wilson writes: "Had I known that my notes would have been of use to you, I could have saved the record of many interesting cases treated in the last few years with your preparations.

One was a case of undoubted tuberculosis—pulmonary—which was treated with the syrup of Hypophosphite of Soda, the case being in the first stages.

This young lady was cured of the lung trouble, but after two years of good health the disease comes back on her in the form of a tubercular disease, affecting the lower end of the left humerus and the lower part of the spinal column.

Had I made notes of the case, it would have been interesting for many reasons; one, especially, the certain character of the lung trouble, and that both from the symptoms and the family history, viz., death of the father from tuberculosis and of one sister since the time I first saw this case."

PHTHISIS, ASTHMA.

BY P. J. BAILEY, M. D., DAWSON, KY.

I have been using your syrup of Hypophosphite of Soda and syrup of Hypophosphite of Lime in cases of phthisis pulmonalis, and your syrup of Hydriodic Acid in asthma, with success. I have at this time five cases of phthisis pulmonalis, all improving when last seen.

CASE I.—Is about well; he is going about attending to his ordinary duties. This was a case of four years' duration. He is well except a little cough in the morning and a slight shortness of breath when walking up hill.

Previous to treatment he had five or six hæmorrhages from the lungs, and has distinct cavity in right lung. I have never given more than seven and a half grains per day, and but one salt at a time, and have never produced pathogenic effects as yet.

CASE II.—Asthma. Lady aged 23 years; duration, from childhood; worse when catemania appeared; disease of a spasmodic character; attacks about every two weeks, and lasted from one spell to another, but very bad only for two or three days.

She has had only one slight spell since treatment and is now quite well, has gained eighteen or twenty pounds in weight and gone to work after being helpless for four or five years. I consider your syrups, used according to Churchill's methods, the only treatment offering the slightest hope of success in consumption.

I shall use your syrups and no others unless they fail me in the future, for I have nothing to fall back upon that would afford even temporary relief. I congratulate you upon the high character and chemical purity of your preparations."

PHTHISIS.

WALTER M. DARNELL, M. D., BELTON TEXAS.

"I have used three bottles of your syrup of Hypophosphite of Soda in a case (phthisis) and am glad to report steady improvement under its use, though it has not been used long enough to say with certainty what amount of benefit will finally be derived.

I have used three bottles of syrup of Hypophosphite of Lime in an old chronic case in my practice, and I must say with the most flattering result, the patient having gained fifteen pounds in weight in ninety days."

NERVE FEEDING.

By the late WILLIAM F. HUTCHINSON, M. D., Providence, R. I.

(Published by the *New England Medical Monthly*, December, 1892.)

I am desirous of placing on record the experience of a few years past in that branch of therapeutics which I have for some time designated by the title of this paper.

If the nervous system is sufficiently normal in status to assimilate for ordinary food its special pabulum, and waste is duly balanced by repair in the correct way, there is nothing to say. Were this specially happy condition common to modern mankind, neurologists would forthwith adopt some other way of earning a livelihood, and their example would be followed by a large majority of their colleagues.

Unfortunately, such delightful prospect is nowhere in existence; on the contrary, human nerves grow more and more demanding, respond more slowly to treatment, and grow old faster with each ten years of advance in the push and hurry which characterizes the epoch in which we live. So we are compelled to seek in every direction for such forms of artificial or concentrated food, as will supplement that ordinarily consumed, so as to make up deficiency in nervous supply, and keep our patients going.

They will not lead normal lives; to rest they are not inclined; to stop and be still for a year is simply out of the question.

In every case of nervous insufficiency, a term which I prefer to Beard's word "neurasthenia," there is a failure of digestion. Certain foods do fairly well; but they are void of principles needed for nervous supply. There is even a steady increase in weight with many of these sufferers; and some of the most hopeless of my patients who are nervously insufficient, are fine looking, buxom persons, who get no credit from friends as invalids, and who suffer almost as much from the derision of those dear to them, as with their physical disease.

All the time there is a steady loss of resisting power; resiliency is more and more impaired, and while no actual organic disease of centres can be detected, there is a profound malaise, an increasing lack of tone, which subjects the unfortunate invalids to more severe discomfort than many whose days are numbered by organic central decay.

I have of late found it best to direct the diet of these patients with rigid care, and to arrange it in such proportions of oxygen and nitrogen that the former shall be considerably in excess, watching excreta carefully to learn if one or both are assimilated in excess, and supplying deficiencies that arise by addition of what is needed. While kidneys continue to eliminate phosphates largely, and the patient steadily loses ground, for example, it is necessary to supply phosphorus, or stop waste thereof. I have more than one case at present where I have vainly attempted to arrest such large proportion of urinary phosphates, and have been forced to supply the loss by adding phosphates to daily food. In one of these patients, there had been for years a steady loss of nerve tone, an increasing insufficiency, accompanied with sciatica and general debility, without loss in weight and careful measurements fail to show any decrease of muscle strength. Yet there is a sense of inability to conduct business, a feeling of fear of unknown or impossible occurrences, and steady mental depression which is far harder to bear, than actual organic disease, and Mr. B., is an object of pity. Urinary analysis gives a specific gravity of 1008, and the sole abnormality present, a steady excess of earthy phosphates.

Now it is my opinion that when such waste cannot be arrested, and I have thus far failed to do so with Mr. B., the only other way of meeting the loss is by artificial supply, and the question arising was what preparation of phosphorus to employ. I have found the element itself so difficult of combination in stomachs weak in

oxygen, that I have abandoned its use, and for years was in the habit of employing metallic phosphides, until I discovered that these two were rarely well borne, and have finally decided upon preparations of Hypophosphites as at once most agreeable, most readily assimilated and most efficient. It is only necessary to have them fresh, for all these oxygen compounds decompose more readily than most other preparations. This quality of stability I have found more to be depended upon with Gardner's syrups of Hypophosphites than with any other, and am so contented with results obtained with his goods, that I use no other.

They are palatable, efficient and reasonable in price. I am amused sometimes at the remarkable swiftness of their physiological action. One of my patients, a nervous lady from Georgia, comes to my rooms daily in depths of despair; "Doctor" says she, "I might as well give up and go home, I have been worse than ever, and want to cry all the time. Oh! what shall I do?"

My assistant brings her a dose of Hypophosphites, she drinks it, and in half an hour is smiling, bright and quiet again, ready for her electrical seance, and all right for another day.

And this is not a singular case.

I am glad to say these few things to my colleagues who are not specially familiar with the action of Hypophosphites in nervous diseases, and heartily recommend them to give the remedy a trial.

DENTITION.

BY C. C. STEPHENSON, M. D., LITTLE ROCK, ARK.

"I have used your syrup of Hypophosphite of Lime in the case of Little Effie B., who has suffered greatly with difficult dentition. Cutting teeth has been slow and painful to her, but since taking the lime her teeth have come through without any trouble. The diarrhœa attendant with dentition, I find is no trouble while taking the lime. The therapy of your lime is undoubtedly as you give it."

THE SINGLE HYPOPHOSPHITES IN DEFECTIVE NUTRITION OF BONE AND NERVE TISSUES.

BY LEWIS G. PEDIGO, A. M., M. D., CROCKETT SPRINGS SANITARIUM, VA.

(Reprinted from *Journal American Medical Association*, Jan. 20, 1894.)

Of all the varied uses of the Hypophosphites, none are more interesting to me than their employment to meet certain faults of nutrition in the osseous and nervous systems. I group these two departments of the human organism roughly together here, because my attention was directed to them in this connection by certain rational considerations. In the chemical constitution, the growth and maintenance of both, phosphorus plays a very important part. So it was inferred that in certain pathological conditions of either, especially when characterized by defective nutrition, the use of phosphorus in some convenient and easily assimilable form, is the primary and essential indication of treatment.

The various clinical trials of this opinion in practice for several years, has amply justified and sustained the inference. My readers are probably familiar with the use of these remedies in cases of delayed teething in children. Aside from this familiar use, my cases have embraced instances of defective bone development in children and a certain low type of subacute and chronic inflammation, occurring in the bony and periosteal tissues of scrofulous or badly nourished patients, as the result of a blow or injury. It must be borne in mind, in these cases, that the predisposing cause is the

state of defective or perverted nutrition. The same traumatism which in such a constitution, would cause a troublesome, tedious and prolonged inflammation, would produce a very slight local effect in a vigorous, healthy subject. The course of such a case under the usual treatment is very unsatisfactory. The periostitis shows little tendency to recover, and the bony tissues, so dependent on healthy action of the periosteum, manifests a tendency to disintegrate. As a result, we have a case of hip-joint disease, or Pott's disease, or some other orthopœdic affection, with the prospect of a *long special* treatment, and an endless array of plaster jackets, splints, &c., &c.

Recognizing and appreciating all the good to humanity and to science that has been accomplished by the modern orthopœdic surgeon, (and it is much,) it is plainly the duty and province of the general practitioner to arrest the progress of these cases in the earlier stage, if possible. In my own experience, the Hypophosphites offer the best means of relief in this incipient period, and, in some cases, almost the only hope of resolution of the imflammatory process. If I might be pardoned the presumption of making a suggestion to a specialist in his own field, I would say to the orthopœdic surgeon, that he could not do a better thing, even after this ugly inflammation has reached that stage in which the tissues break down and deformity results, than put his patient on Hypophosphite of Lime as adjuvant to his special surgical measures. Judging by its effects in other fields, and in the first stages of the class of cases under consideration, it would impart more vitality to a failing system, furnish some much needed elements to the organism, and promote healthier action and a tendency to repair in the affected tissues. For obvious reasons the Hypophosphite of Lime is the particular salt to be used in all injuries and inflammations of bone and periosteum.

With no intention of entering into an elaborate review, I recall one case sufficiently typical to exemplify my meaning.

A girl, thirteen years of age, was thrown from a horse, falling on her side, so that the left thigh struck the apex of an angular rock. Some lameness resulted—obviously associated with an injury to the femur near the great trochanter. A slight depression in the bone could be felt at this point. Inflammation, swelling, redness, followed, with considerable deep-seated tenderness and pain on walking. This condition was temporarily improved by counter-irritation—use of iodides and various other remedies. But there was a constant tendency to relapse, especially in damp, depressing weather, with east winds. The case was becoming chronic, the general health failing, the affected parts threatening a chronic abscess, with more or less disastrous effects upon the integrity of the bone and the future usefulness of the limb. The parents were justly and reasonably alarmed, because one bad case of hip-joint disease had occurred in the family, as a result of a similar injury. A scrofulous taint was suspected. The patient was directed to take a teaspoonful of Gardner's syrup of Hypophosphite of Lime, three times a day, with no other treatment, except rest, suitable diet and hygienic precautions. Improvement began with surprising promptness—considering the peculiar nature of the tissues affected and the usually slow processes which characterize them. The most striking feature was the *control of the pain* which the remedy seemed to exercise. Of course this was not a *direct* anodyne influence, but was effected through a modification of the imflammatory processes. The case went on pretty steadily to a good recovery. It is significant that the patient observed the pronounced change in the case as co-incident with the change of treatment, and expressed herself as feeling safe, so long as she was taking this remedy.

As to the other class of cases alluded to above, I shall present the essential history of only one—which is sufficiently typical of a large number, to answer the purpose of illustration.

A child, male, aged sixteen months, was suffering with diarrhœa and indigestion—associated with difficult and delayed dentition. The gums were red and swollen; teeth were developing slowly which should have appeared about the seventh month. The anterior fontanelle was very large, relatively larger even than it should have been at birth, showing retarded and defective development of the parietal and frontal bones

and indicating a general faulty nutrition especially of osseous tissue, both in the fœtal and infantile periods of life. The general appearance of the child was extremely bad. It was ill-nourished, emaciated, pale, feeble and irritable, with loose, easily wrinkled skin, and a bad complexion. A treatment was adopted for the temporary relief of the dental irritation and diarrhœa, and a prolonged course of syrup of Hypophosphite of Lime was directed, with no other medicinal treatment. I did not see the patient again for six months. (The family lived some distance away). At the end of that time the mother brought the child to me, not for any professional service, (which was obviously not needed,) but for exhibition. The improvement was beyond all anticipation. The fontanelle was almost entirely closed, the teething process had gone on without irritation of any consequence, and had progressed much more rapidly, and the gereral condition was so much better, that no one could have identified the child. It was plump, well nourished, of good, clear, rosy complexion, and evidently felt comfortable and in a good humor with the world— a symptom of great significance in these cases.

I have spoken of this case as a *typical* one, meaning that it represents a *class* of cases which in my experience have been conspicuously benefited by the use of the Hypophosphite of Lime.

I must say, however, that the *brilliant results* of treatment in this instance, must not be expected in every case. It is *somewhat* above the average in this respect, and therefore not strickly typical in this sense. But its history exemplifies and illustrates principles of treatment that will hold good in all of the class of cases to which it belong.

Under the second division of my subject, viz.—the use of the Hypophosphites as nerve nutrients, it is my purpose to confine myself to one case, viz., a specific gummatous tumor of the brain.

The patient, a bright mulatto, aged twenty-six, stout and generally healthy in appearance, gave a distinct history of syphilis. At the time he came under my observation he was troubled with aphasia, with partial paralysis on the right side, walked imperfectly—scraping the floor lightly with the sole of the right shoe. He could be sent to take a note,(not a verbal message,) could go to any portion of the town, find his way without difficulty, but could not remember the names of the streets. He was sent after cows on the commons, and he would get the right ones, but could not tell their names, and if he attempted to throw a stone at any of them it dropped within two or three paces of his feet. The left hand and arm were much stronger than the right. He was obstinately constipated.

The case was vigorously treated with large doses of iodide of potassium, and small doses of mercury biniodide, with some attention to digestion and state of the bowels. The iodide was given in increasing quantities until a dose of sixty grains, three times a day was reached. This was continued for a period of about a week or ten days, alternating with short periods of suspension of the remedy.

The effect was good, and improvement began and continued for months; the paresis was better, the mind was clearer and more vigorous; the strength and power of endurance increased, and the aphasic symptoms yielded perceptibly. After some months of this treatment, the case seemed to come to a standstill—the improvement reached a limit. Now it was considered safe to begin a *restorative* treatment, on the theory that the iodide had done its work of liquefaction and absorption of the tumor faithfully and well. The patient was placed on a small dose of tincture of nux vomica, (ten drops) thrice daily before meals, and the effect carefully watched. It produced some irritation of the brain—cerebral hyperæmia and evident aggravation of all the symptoms. It was withdrawn promptly and the former treatment resumed for another month—with a few doses of bromide of sodium at first, to control the untoward effect of the nux vomica. After a month the nux vomica was again cautiously tried, and this time with good effect.

The symptoms—mental and physical—all improved somewhat, and no irritation supervened. After a few days another measure was added to the treatment, viz., the use of a teaspoonful of syrup of Hypophosphite of Lime, thrice daily, after eating.

The effect of this step was perceptible in the decided improvement of all the symptoms. I continued the use of the Hypophosphites in this case for several months, watched the effects carefully and with intense interest. I had dispensed from my office only two ounces of the syrup of the lime salt in the first place, so it was soon exhausted. When the patient returned I found I had no more of that preparation, but had a remnant of syrup of Hypophosphite of *Manganese*. I substituted this and found, to my surprise, that it seemed to act more favorably than even the Hypophosphite of Lime. When this remnant was exhausted, I returned to the use of the lime, however, and the patient *noticed the difference* in his condition.

He insisted that I give him "the same medicine that he got the other time," which I did, and with the same result. His neighbors and friends remarked upon the mental improvement—the family reported that he could begin to work better and remember messages more accurately, and the patient said he could "learn and recite his Sunday school lesson better." I had ample opportunity to watch this case closely, and to differentiate the effects of the various remedies used at different times, and my conclusion is that the single Hypophosphites were decidedly efficacious in the latter stages of this case.

The theory which led me to their use may be stated as follows:

In cases of gummata of long standing the contiguous parts of the brain are subjected to constant pressure, interfering seriously, not only with their functional activity—but with the nutrition of the cells and fibres which enter into their structure. After the gummata have been partially or fully absorbed under the influence of the heroic doses of iodide of potassium, so that the brain tissue has the opportunity to expand again to something like its normal size and shape—these depressed, starved and dwarfed fibres and cells need some restorative remedy, some special nerve *nutrient*, to assist in this development. Nothing so naturally suggests itself to the medical mind, for this purpose, as phosphorus in some available form. As the single Hypophosphites is my favorite preparation of phosphorus for almost all its uses, I prescribed them in this case, with the results recorded above.

I have reason to believe the effects can be duplicated in other similar cases.

In an old case, as this was, even when it first came to me, the physician must not expect too much of any remedy. Parts of brain structure have been absorbed under the long continued pressure. Other parts, even though remaining, have been so damaged that their integrity cannot, probably, be *fully* restored, or their functions rendered strictly normal. In conclusion, let me warn any reader who feels sufficient interest to test the matter—not to begin the restorative treatment too early in the development of the case.

ARTICIAL RECONSTRUCTIVES.

By C. E. BOUM, M. D., Providence, R. I.

(Published by *New England Medical Monthly*, January, 1893.)

It may seem strange that a term like this should be chosen as title to a paper upon the simplest and most obvious forms of chemical foods.

All reconstructives are in a certain sense artificial, when not obtained in the ordinary diets, by which the human race is accustomed to avert the results of destructive metabolic change.

In another sense no reconstructive is artificial when either or any of its basic compounds enters into the normal structure of our tissues, yet, while the accustomed food contains a sufficiency of what is necessary to prolong life, there are times when certain elements in normal combinations cannot be assimilated and a demand is made for extraneous aid. It is then that the judgment of a sagacious practitioner is called upon to decide what portion of the system needs this assistance, needs, in fact, to be reconstructed.

Among the elements that are wasted faster than supplied when the system is below par, are chiefly to be found those which are absorbed with difficulty in normal condition and contained in small quantities in normal food. I refer to the mineral constituents of the blood, which are lost with ease, regained with difficulty. In order that a healthy balance may be reached after it has once been disturbed by disease, it has been ascertained by experience that the lacking material must posses certain qualities in the remedies given in order to assure digestion and assimilation.

These are first, agreeableness to the palate, since nothing is more repugnant or less to be borne than distasteful, nasty medicine. Next, stability of combination, for in what form we administer artificial food it may be kept up for a long time in order to do much good. It must be in concentrated form, as when medicines are to be continued, the smaller the dose the better.

Now let us see for a moment, which of the mineral constituents of the blood are soonest lost and remain longest absent, when the stomach and digestive tract are debarred their use by disease. The rich rose-color of the healthy cheek indicative of free circulation of blood well loaded with iron, slowly gives place to sickly pallor as that metal is withdrawn, while bleached lips and colorless ears bear witness to the loss. Slow, sluggish movements of the body once so agile, of lethargic mental processes in the brain once so quick to respond, together with neuralgic pains flying here and there like red hot arrows, from a heated bow, signal loudly and plainly, disappearance from the economy of its chief vitalizer—phosphorus.

We have essential need of two of our artificial reconstructives, iron for the blood, phosphorus for the nerves.

It is very true that iron is by no means the only constituent of the blood that is withdrawn when disease begins, but it is almost alone in being easily abstracted and slowly replaced. Each inspiration of pure air that fills the lungs oxidizes this metal with which it comes in contact by endosmotic action in large quantities and more rapidly that it can be supplied when absorbents refuse duty or are sluggish. With phosphates the case is somewhat different, they are poured out from the system in increased quantities whenever a slight deviation from normal disturbs equilibrium. It is a common thing to find phosphates in large excess in urine after so small a disturbance as that of a slight cold, their union with the blood being unstable. It is therefore necessary in medicating patients who are anæmic to give such remedies as are properly proportioned, if compound, to the lack of vital stimulants that we believe to exist.

Now phosphorus alone has been found by experience to be illy fitted for continued use, it is neither easily absorbed nor pleasant to take and must therefore be combined with oxygen and water. It is thus that our good friend, Mr. Gardner, prepares his famous syrups of Hypophosphites of alkalies and metals.

Hypophosphorous acid consists of one equivalent of phosphorus, one of oxygen and two or three of water, with a strong affinity for more oxygen, which property it carries with it when administered as a medicine.

By its great power as a deoxidizer it retards cellular combustion and permits vital processes to proceed regularly. Dr. Churchill, of Paris, called attention to these salts in 1856, and claimed that they were of infinite advantage in the treatment of consumption, even long before Mr. Gardner had discovered his valuable method of combining them.

These new preparations at once assumed a leading position in modern pharmacy, and stand to-day unrivaled among its products for effectiveness, stability, and elegance of form.

They number more than twenty different combinations so that it is practically out of the question that a practitioner should not find in one or the other the elements of tissue building which he seeks.

For more than a year past I have followed with interest and care, the administration of Gardner's preparations and with a single exception, to be hereafter noted, the results have been good and their administration effective. So much so indeed, that I

have arrived at the conclusion that no better form of nerve food or artificial reconstructive need be sought. It is my purpose to close this paper with a series of pictures of cases whose only medical treatment was by Gardner's syrups.

CASE I.—Miss D., aged 52. In April of 1891, had an attack of grippe which lasted about three weeks, again in October of the same year, had another slight attack. In June of 1892, was taken with rheumatism in the knees, which steadily increased. Appetite good, slept well, no pain in back, but considerable headache over brows. With electrical treatments was ordered Gardner's Hypophosphite of Soda which was continued for about two months with steady improvement. At the end of that time the soda was changed for Hypophosphite of Iron which was kept up until her dismissal, a comparatively well woman, in April of 1893.

CASE II.—Mr. H., aged 34. About a year ago, upon examination of inner right thigh a slight tumor was found, about the size of a hen's egg, movable under the skin, with occasional acute pain following nerves down to and around the knee, starting from the groin. The growth increased up to last March, when it had attained the size of a child's head, and was removed by Dr. L. P. Pilcher, of Brooklyn, who pronounced it a semi-malignant tumor, containing a certain amount of fluid. Since the operation he has been gradually losing tone. Suffers some from pain in line of incision, with stiffness of muscles increasing with exercise. In May last was ordered Gardner's syrup of Hypophosphites of Lime and Soda, taking for one month syrup of Hydriodic Acid. In June the enlargement in line of scars absent, and the general conditions were much improved. Changed the compound to Hypophosphite of Iron. The progress has been rapid, the stiffness is giving way, and strength is increasing.

CASE III. Mrs. M., has never been strong since marriage and within a year has broken down with mental overstrain. Has great weakness and general nervous debility. Appetite poor, sleeps fairly, hands and feet cold, pulse fair. Has been since May taking syrup Hypophosphites of Iron and Quinine with excellent results. Later a uterine trouble come up for which a solution of white oak bark and glycerine is being used as a tampon while the syrup of Hypophosphites of Iron and Quinine is still being taken as a tonic.

CASE IV. Master L., aged 11. A little over two years ago, while at breakfast, had a convulsion which lasted some ten minutes, followed by sleep, and after an hour or two, vomiting of undigested food. No aura epileptica of any kind. Pallid face and pale lips covered with hot scabs. Epilepsy, minor form of indigestion. A careful diet list was ordered, laxative antiseptic pills and the bromides. After about one month of this treatment Gardner's syrup of Hypophosphite of Iron with syrup of figs was given. The improvement has been rapid, incurring but two or three convulsions since he began treatment, and these being caused by not carefully following the diet given.

CASE V. Miss R., had some three months ago caught a severe cold and had a sharp attack of grippe. Upon presenting her case to her physician he prescribed Gardner's compound of iron and quinine, a tablespoonful to be taken four times a day. After taking twelve ounces of the syrup, she returned for more, saying, "Doctor that medicine seemed to be the right thing. I have not eaten as much at my meals for a year and I feel like a new woman," which she certainly looked, with her bright eyes and glowing cheeks.

Another bottle was given her and after she had taken four she was entirely free from all effects of the health-destroyer grippe.

CASE VI. Only one case do I call to mind where the Hypophosphites have not done good.

Mrs. I., a pretty little woman of twenty, came from New Hampshire, in April of 1893, for medical care. Two months before had neuralgia in the head and was under the care of a charlatan, steadily growing dizzy and deaf.

After three days of sharp electrical work she could hear very faintly a watch tick at a distance of two or three inches from her ear. At the end of a week she could hear it at a few paces away, the dizziness had gone but she had very little strength, no

Nevertheless it does not appear that their results are any better than can be obtained by other methods of treatment, and until such is the case, no special claim can be substantiated for this remedy. It is, however, yet too early to pass judgment in this matter.

The introduction into the system of substances which inhibit chemically the life of the specific bacillus of the disease, and antagonize the effect of the toxines resulting from the life activity of microörganisms, is theoretically an inviting method of therapeusis. The observations of Armand Ruffer relative to the action of lymphocytes and microphages, bring up the question as to what extent such chemical treatment may be carried without interfering with the natural therapeutic effect exhibited by the biological processes of these cells. Specific effects from agents of this class introduced into the system, must be obtained in one of these ways; by destruction of the bacillus by antagonizing the evil effects of the bacillus, or by stimulating cell activity, and possibly by increasing the germicidal power of the bodily fluids to convey immunity against gross pathological changes in the lungs, or by such cell stimulation inducing connective tissue changes in the pulmonary tissue. In the light of the experiments of Roemer and Büchner, which open the question as to whether protein extractives derived from other sources that the tubercle bacillus, may not be able to produce irritation, inflammation, and necrosis; also the experiments of Prudden to the effect that an element of the protoplasm of dead bacilli possesses great cell stimulating power, the resulting lesions not haying the active tendency to necrosis exhibited by the tuberculous lesions, together with the opinion of most observers that the practical failure of tuberculin is due to its tendency to produce tissue necrosis, we are still justified in hoping that further experiment will eliminate the peculiar destructive element from this agent, and will leave us a substance capable of producing definite therapeutic results. It seems most reasonable to expect these results through the induction of connective tissue changes through cell stimulation, at least in those instances where gross tissue changes have resulted from the action of the bacilli.

Klebs insists on the fact that tuberculocidin does not induce any inflammatory or necrotic process, and acts only through its germicidal qualities.

When any considerable tissue change has taken place in the lung, the term cure can only be used in a relative sense, the lung can never return to its former condition, and the respite from further destruction depends on the extent to which nature will limit the process by connective tissue organization. These cirrhotic processes in tuberculous lungs, must be regarded as nature's efforts to limit the disease.

Councilman's view, that because bacilli are found in the inflammatory tissue surrounding tuberculous masses, this tissue must therefore be part of the tuberculous process, does not seem to be well taken.

There is less tendency to necrosis in tubercular nodules where fibroid development has been marked, providing the blood supply has not been cut off, as shown by the better vitality in these nodules where Cornil and Ranvier were able to demonstrate blood vessels.

The fact that lungs have undergone fibroid development from other than tuberculous causes, are especially liable, in some instances, to secondary tubercular infection, does not militate against this view of the protective nature of these indurative processes. Cardiac hypertrophy is nature's remedy for insufficient force, and yet this very hypertrophy entails of itself in time, insufficient nutrition and degeneration; so in the lungs sclerotic processes compromise the circulation, nutrition, oxidation and elimination, consequently the resistance of a lung under such conditions must always be such as to invite the invasion of the tubercle bacillus.

The impossibility of the limitation of tuberculous processes without the development of connective tissue changes, directs our therapeutics in the line of combating the tendency to necrosis in such processes until such changes can be developed, and all methods of treatment are found directly beneficial in so far as they favor such develop-

ment. In consideration of the general acceptance of the tubercle bacillus as the specific cause of tuberculosis, also that the majority of medical men at present agree with Koch and Virchow, that it is not the disease which is inherited, but a condition of vulnerability of the tissues, preventative medicine becomes of the greatest importance.

It is surprising what an apathetic state exists not only among the general public, but among medical men also, in regard to this feature of the subject. On the part of the public it is the result of ignorance largely, though the average citizen considers it as a violent infringement on his personal rights, any attempt to regulate his great American prerogative of expectorating when and where he chooses.

If the course adopted by the anti-tuberculous league of France, or some modification of it as suggested by the editor of the *Universal Medical Journal*, be adopted in this country, and the excellent set of rules and instructions adopted by this society be made public property, much good might result therefrom.

If the claims of Grancher and Martin should prove true, *i. e.*, that it is possible by inoculation to establish a prolonged resistance to fatal forms of tuberculosis, and also to produce an immunity from infection, of a greater or less duration, it might be possible to attain some definite results in this department of medicine.

Next in order I would place the climatic treatment of tuberculosis. The results obtained by the use of remedies alone, in a climate like this, cannot compare with the results obtained by the judicious use of climatic and medicinal means combined. The many difficulties in the way of the practical application of climatic treatment need not be dwelt upon. As far as the medical adviser is concerned, it appears the chief fault lies in a want of proper knowledge of the geographical and meteorological conditions of various localities, and the specific requirements of the individual case. In regard to the former it is to be hoped that the work of the American Climatological Association may result in more general and definite knowledge. In regard to the latter, and the special adaptation of certain localities, the contributions to the literature of this part of the subject by resident practitioners, while recognizing the special features of their particular locality, adapting it to the special forms of the disease, the general features of the region are so enlarged upon that the locality in question would seem to be the Mecca of all tubercular pilgrims.

The general features of climate which are beneficial are equable temperature, dryness, elevation, and in some instances warmth.

In some localities an ozonized atmosphere is credited with the good effects. The recent observations of Ohlmuller, of Berlin, go to prove that ozone has a powerful destructive action on various bacilli, in an inverse ratio to the amount of organic matter present, and the dryness of the bacteria and ozone.

Schoenheim's opinion, that ozone in the atmosphere is a powerful disinfecting agent, is supported by the observations of Wolffhügel and Fox. Dr. Henry S. Norris reported in the *New York Medical Journal* for November 5, 1892, a series of cases treated by the administration of ozone with beneficial results. It is probable that the good effects of climate in some localities in the lower altitudes is due largely to ozone. The general effect of climatic treatment is to stimulate oxygenation, oxidization and elimination, and the stimulant effects of ozone on these functions cannot but be beneficial.

The writings of Williams, Copeland, Taylor, Burney Yeo, Huggard, Fisk Anderson, and others give a fairly unanimous view of the effect of climate, and the class of cases likely to be benefited. The chief discrepancy one finds in the papers on this subject is the varying opinions regarding altitude in hemorrhagic cases. There is no doubt that with proper sanitaria with modern hospital regulations, located in the various health regions, and with the cases properly selected according to the nature of the location, that much better results should be obtained than by the haphazard way of allowing patients to go to these regions and take care of themselves.

Nicaise, Herman Weber, Leyden, Detweiler, Kretszschmar and others advocate the hospital treatment of tuberculosis in special institutions. The promiscuous association

of cases which are in an infectious condition, and those which are not, at health resorts, is to be discountenanced.

The tendency of the present is to avoid warm climates, especially those of moderate moisture. Williams has shown that some cases of catarrhal nature do the best in such a climate.

In indicating the altitude for a given case the following factors must be kept in mind: Age of patient, stage of disease, rapidity of development, presence of pyrexia, amount of tissue involved, condition of general bodily functions, condition of heart circulation, course of infection if it can be determined.

The available lung space, the absence of emphysema, and the condition of the heart are important factors in estimating the effect of a dry rarefied atmosphere.

Cases showing rapid development, considerable involvement of tissue, pyrexia; cavities showing tendency to rapid necrosis of lung tissue, absence of connective tissue development, tendency to hemorrhage after disease has existed six months, emphysema, bronchiectasis, dyspnœa and cardiac weakness are unsuitable for an elevation of over 1500 feet.

Cases of fibroid phthisis with much shrinking of the lung are not suited for high altitudes, even though pyrexia be absent, as these cases eventually suffer from cardiac degeneration and failure. Eight per cent. of markedly tuberculous patients discharged from Brehmer's institute at Goerbersdorf remained relatively cured after fifteen years.

The only remedy which has held its own in the medicinal treatment of tuberculosis, is creosote; this medicament after falling into disuse for a number of years, again revived, chiefly owing to the abiding faith and advocacy of Summerbrodt of Breslau, who asserts its specific influence by resisting the development of bacilli. Guttman concludes that if the blood could be made to contain one four-thousandth part of its quantity of creosote, bacilli would cease to develop. He calculates that this would require over twenty grains, which he thinks impossible because we cannot determine the necessary quantity for administration. Summerbordt however, believes it possible to administer the necessary quantity. Wm. H. Flint claims the best results are obtained by pushing the remedy to the point of toleration by mouth, rectum and by inhalation.

Tortensson exhibits three to four grammes daily of the drug, by intramuscular injection of guaiacol in sterilized olive oil, and by rectal injection of creosote.

Cornet, from experiments, concludes that the favorable effect of creosote results from its improving the appetite and diminishing bronchial secretions. This view is also taken by some clinicians. Recent experiments go to prove that creosote in the blood combines with certain albuminoids forming combinations which are without any particular germicidal influence. Experiments on animals have not borne out the theory of Bouchard and others, that creosote induced connective tissue growth. Personally, I entirely agree with the opinion that any such influence is exerted only through its ability to stimulate nutrition. I have never been able to convince myself that directly it affected the process in the lung in any way. My own experience with creosote has been indifferent. The appetite generally improves, and some weight may be gained, with general improvement in all the symptoms, but it does not appear to me to have any effect on the tubercular process in the lung. I have used it generally in capsule or in emulsion with hydroleine. The substitution of guaiacol or some of the other substitutes for creosote is much pleasanter for the patient and appears to be about as efficacious.

It is possible that in this country we have been administering too little creosote to obtain as good results as are claimed by continental observers, but the gluteal injection of from six to eight grammes of a mixture in the morning, and the rectal injection of a pint or more at night, is a form of treatment hardly adapted to the disposition of the average American, especially when this must be continued for two years or more.

The use of intratracheal injections and inhalations while they may relieve some

symptoms as curative means, will probably, in time, be placed in the same category of failures as the more unscientific hot and cold air treatments of Worms and Krull.

The cantharidin treatment of Liebreich has not been largely accepted; theoretically it is a reasonable method, and experiments have not been altogether without results. It seems very doubtful, however, if practical results can be obtained by this method, though when we consider the practical immunity from infection, afforded by the greater amount of serum in the lungs from insufficiency of the mitral valves, the theory of Liebreich does not seem visionary, taken in connection with the experimental proof already afforded of the germicidal properties of the bodily fluids.

The treatment by dogs' serum, and local injection of chloride of zinc, have so far failed of any practical results, and need not be specially commented upon.

The Gibb's-Shurley treatment has died a natural death, if indeed, it was ever born, the practical inutility of this method of treatment impressed itself early upon me, and experimentation with it has only served to confirm my first impression. In my own practice, both public and private, I have for a number of years past treated a number of cases with Hypophosphites in the form of a syrup of whichever salt was indicated; "*I prefer Gardner's syrup as being the most stable on the market.*" This must not be confounded with the combined Hypophosphites. The latter preparation I used for several years in a large number of cases and became firmly convinced of the truth of Churchill's teaching, that the compound syrup of Hypophosphites is distinctly injuricus to phthisical patients.

The Hypophosphite of Soda is generally the most useful, and is given in apyretic cases where there is not much expectoration.

The quinia salt is used temporarily when the temperature is over 100° Fahrenheit, and the lime salt where there is too free expectoration, six or seven grains daily being the maximum dose. I believe I have had fully as good results from this method, as by any other, if not better.

In advanced cases I have found no mixture so efficient in quieting the cough and loosening the sticky mucus as one-eighth of a grain of morphine with ten drops of dilute hydrobromic acid given in syrup of tolu. For troublesome night sweats atropine and camphoric acid are the most useful. The latter is free from the disagreeable effects of the former, and may be given in capsules of five grains each, three of these at 6 in the evening and three at 9, and increased if necessary; the effect may last for two or three nights.

In closing I wish to deplore the fact that there is in this city, so bountifully supplied with charitable institutions for the supply of medical and surgical relief to the needy, not one devoted to the care of the most fatal malady of our time. With the general recognition of the infectiousness of tuberculosis, hospitals which have always admitted such cases are becoming very reluctant to do so, and the indigent sufferer from tuberculosis literally has nowhere to lay his head. A special institution for the treatment of such cases is a crying necessity, and it is hoped that Chicago will not much longer remain behind other large cities in this respect."

Richitis.—A. Springer, M. D., physician in charge, State Home, for sick and needy children, Lewiston, Me., writes: "We have found the syrup of Hypophosphite of Lime, of great value in richitis and similar diseases. A number of children, unable to walk, have been cured by that treatment. Several cases outside the 'Home' are taking it with benefit."

"The Hypophosphites have been largely used and highly extolled by Dr. Churchill in the treatment of pulmonary consumption, especially the alkaline Hypophosphites, which should be perfectly pure, like those of R. W. Gardner, of New York."

"*Materia Medica, Pharmacology and Therapeutics.*" Shoemaker, vol. 2, page 812, 1891.

Phthisis.—A. U. Evarts, M. D., special examiner surgeons pensions, La Porte City, Iowa, July 17, 1886, writes: "Our druggists have ordered your syrup, and I am satisfied that *through it alone* I have saved one consumptive's life, and probably

two. The positive case was the worst one,—in the third stage of phthisis. Patient confined to bed—fever, cough, night sweats, and hemorrhage that presaged immediate dissolution of patient. Right lung cavernous, and almost wholly hepatized—left lung partially implicated. After a thorough examination, I gave the patient about three weeks to live. Put patient permanently upon Gardner's Syrup Calcis Hypophos. Improved slowly but surely for a year and a half; occasionally patient has return of bad symptoms. On an average of once in three months for two years, this case, a woman, has had a formation and rupture of pelvic tumor.

Have had a number of other cases, first and second stages, and have been obliged to prescribe different makes of the syrups, and have found disappointment resulting from their use. To be brief, I will say I look for mathematical precisions when I use your syrups of lime or soda. I get better results in treatment since following Dr. Churchill's mode. Hereafter I will record my cases for the benefit of the profession. These general facts will suffice to awaken the interest of the true physician in the treatment of phthisis."

TUBERCULOSIS—PROPHYLAXIS—HYGIENIC MANAGEMENT—TREATMENT WITH THE SINGLE SALTS OF HYPOPHOSPHITES.

By W. E. ANTHONY, M. D., Providence, R. I.

(Reprint from *New England Medical Monthly*, July, 1895.)

It is now generally conceded that heredity, which was formerly supposed to play a very important part as an etiological factor in the production of phthisis, has, in the light of recent investigation, assumed a role of secondary consideration. I believe that it is agreed that tuberculosis does not exist in the pre-natal state, but in a child, who at birth is possessed of a weak constitution, the susceptibility to the disease is greater than in one who is born strong and healthy.

According to the eleventh census (1890) there were reported 101,645 deaths from consumption during that year, being about 1.6 in 1,000 population. From reports from districts where the registration of deaths is accurately kept, the death rate is so much higher than this, that allowance must be made for districts where registration is neglected or imperfect in estimatiug the extent of phthisis in this country. Dr. John S. Billings, says: "From this data it is quite safe to assume that the number of deaths due to pulmonary phthisis in the whole country during the census year was over 125,000. If we estimate the average duration of the disease as two years, we shall have twc cases in existence for every death." Based upon this calculation there are at present in the United States over 250,000 cases of pulmonary tuberculosis.

Phthisis pulmonalis, as well as tuberculosis of other organs and portions of the body is due to the presence of a micro-organism—the tubercle bacilli. This organism is always present in the sputum of consumptives, which, when expectorated and dried, may be disseminated in the air and inhaled by others.

When a condition of lowered vitality exists, in such as may be exposed, the introduction of one or more of these germs within the organism, in soil favorable to their development, is productive of rapid multiplication.

"Athletic Lung," is a term used to designate the abnormal development of lung acquired by athletes whose exercise calls for the constant use of the lungs at their utmost capacity. Such men upon giving up athletics and taking up sedentary occupations are peculiarly subject to pulmonary disease. The over-developed lung is only used in part and the unused cells easily succumb to disease.

An environment suitable to their propagation must exist, without which no development can take place. The conditions of the environment has much to do with the early or late development of the morbid condition. The lungs are the organs most frequently attacked, because it is there that the bacillus finds the fertile soil in moist mucous membrane, with defective epithelial covering, for which it has a special predilection.

The germs may find lodgment in the body by other means than aerial infection. There are two ways by which the germs may be brought, which are not generally considered. One, by means of flies or other insects, which may, after feeding upon tuberculous sputum, alight upon food and deposit thereon germs acquired in the first instance.

An English scientist has recently been experimenting upon the manner in which the germs of tuberculosis are disseminated by ladies' dresses. He examined the dust taken from garments which had been trailed on the ground and in a number of instances he found tubercle-bacilli.

In this manner the germs may be dissipated in the air of homes when the garments are brushed, and thus be placed in a position to infect any who may be exposed.

When the bacilli are carried into the alimentary canal, either with the saliva or with the food, they may be rendered innocuous in various ways, but should the glands be devoid of epithelium or the tissues so weakened from any cause that their power of resistance to the action of the micro-organisms can be readily overcome, infection is likely to occur.

The action of the tubercle-bacilli is primarily a local one, not affecting the system generally, but causing pathological changes in organs in which they are located, with a disturbance of function and a production of septic material. The more vital the organs attacked the greater will be the effect upon the whole body.

The prophylaxis of tuberculosis should extend to all avenues through which infection may be received with especial reference to the air and food, the latter especially in cases of infants is a frequent source of infection. Milk is a food which is used by all classes and all ages and which more than all other foods is likely to be contaminated.

It should be sterilized in *all* cases when used as a food for infants and boiled when used for cooking purposes.

Bacteriological examination has shown the presence of the tubercle bacilli in the milk from tuberculous cows, autopsies of such animals have disclosed the characteristic lesion. A single tuberculous cow is likely to spread the infection to others which may herd with her.

In several states effective laws are enforced to prevent the spread of bovine tuberculosis.

In Rhode Island competent inspectors have been appointed whose duty it is to examine all animals which are suspected to be tuberculous and to cause to be killed all which may be pronounced so diseased.

As a general thing it is easy to determine the existence of the disease by physical signs, but in cases of doubt the tuberculin test is used.

This is based upon the fact that the injection of a small quantity of tuberculin, which will not affect a healthy animal, will in one with incipient tuberculosis cause a decided rise in temperature in from eight to twenty-four hours. An autopsy is required to be made upon all animals killed by order of the inspectors. The owners of the animals are paid by the state one-half the value of the animal, except in cases where the autopsy shows a mistake in diagnosis, when the full value is paid.

The State Board of Health of Rhode Island has recently taken measures to locate all existing cases of tuberculosis among the residents of the state and have provided for the reporting of all new cases.

To this end circulars have been sent to every physician in the state calling attention to the work and requesting their cooperation. Blanks were enclosed with the request that they be filled out and returned to the secretary of the State Board of Health. as follows:

REPORT OF A CASE OF CONSUMPTION OR TUBERCULOSIS EXISTING IN THE STATE OF RHODE ISLAND.

Name of patient? (This is confidential and is requested only for purpose of avoiding duplicating in enumeration.)
Present residence, City or Town,
Street or Road,
No. of house or designation.
First, Second or Third Floor of house,
Age of patient, Color,
When was disease first noticed,
Where was patient living at the time,
Was the patient exposed to the disease at that time in the family,
Was the patient himself or any relative of the patient affected with the disease at any time previously,
How many cases of the disease in the family at that time,
How many living in the same house at the present time,
Where did the patient last live previous to moving into present location,
To what stage has the disease advanced at present,
What is the character of the sputum at the present time,
Has the disease at any time been arrested in its progress,
Has change of climate been adopted as a curative means, and with what results,
Do you desire an analysis of the sputum as assistance in diagnosis,
Any further data which can be given to assist this investigation will be gratefully received,
Date of Report,

Physician,

The Board of Health has also offered to examine free of charge, all sputum sent by physicians having cases of suspected tuberculosis. As the proper and successful management of the disease depends to a great extent upon its early recognition, the value of such aid to the diagnosis is apparent.

Specially prepared bottles for the collection of sputum have been placed at various centrally located drug stores throughout the state which may be obtained by physicians free of expense.

These are to be filled and forwarded to the secretary of the Board of Health under whose direction a bacteriological examination of the contents will be made and an immediate report returned.

Blanks are issued to be enclosed with each specimen sent, as follows:

RHODE ISLAND STATE BOARD OF HEALTH.

Directions for Collection of Sputum for Bacteriological Examination in Pulmonary Tuberculosis.

Sputum should be collected only in clean, wide-mouthed well-stoppered bottles, with a capacity of at least four ounces. Suitable bottles are supplied by the Department, and have been placed at the principal drug stores for the convenience of physicians desiring them.

Care should be taken that bronchial and not pharyngeal secretion is collected, and the expectoration discharged early in the morning is preferred. If the expectoration is scanty, the entire amount discharged in twenty-four hours should be collected.

The data asked in the accompanying blank should be carefully filled out in every case.

Laboratory No.
Sputum from a Case of Suspected Tuberculosis.
Name of sender of specimen.
Sputum sent constitutes all discharged for hours from
M. to M. Date
Name of patient

Age Sex Color
Address Occupation
Att. Physician Address
Clinical diagnosis
Duration of disease
How contracted
Have there been cases of consumption in the family?
How many?
Relation to patient Date of last case

The Rhode Island State Board of Health publishes suggestions for the care of sputum in cases of consumption as follows:

"It is not generally believed that the disease commonly known as consumption is a disease which is communicable from one person to another, and is caused by minute living organisms which are always found in great numbers, in whatever portion of the body may be invaded by the disease.

These small germs or seeds are brought to the surface in the sputum or mucus, which is coughed up and which, when carelessly thrown upon the ground, or collected in cloths, becomes dry and crumbles into dust. In this dust the organisms are, at times, still alive, and when blown about in the air may be breathed into the lungs and air passages by other persons.

If the lungs are in a weakened condition as the result of exposure to cold air, or by general weakness of the whole body, or when made sore by irritating substances such as fine particles of steel, in such industries as file making or steel grinding, or by breathing in fine coal dust, or by lack of fresh air as in mills, the organism is then provided with a soil where it can grow. It is undoubtedly breathed in the mouths of many healthy persons daily, but does no harm as long as the mucous membrane is in a healthy condition.

In the lungs of a consumptive who is improving, the breathing in of this dust starts new points of the disease.

Knowing that the sputum contains the germs from which the danger comes, it can be readily seen that if they are destroyed before it turns into dust, that it cannot produce fresh cases of the disease.

Therefore, all sputum or spit of consumptives should be treated in some way in order to destroy the germs which may reproduce the disease.

It is desirable that the sputum be received in some light cup, or receptacle, containing some form of disinfectant, such as a solution of bi-chloride of mercury in the strength of one part to one thousand.

"If received into handkerchiefs they should be immediately placed in the disinfecting solution, or under water, and as soon as possible thoroughly boiled for half an hour. It is better to use pieces of old cloth which may be *burned*. The cloths or handkerchiefs should not be tucked under a pillow or in a pocket, nor allowed to lay aside and dry and then shaken out to use again, as this throws the organisms into the air. A small bag made of cloth which can be boiled and washed may be used to hold the cloths until ready to disinfect or burn them.

No person having consumption should spit upon the floor at home or in the cars nor upon the street.

No mother with consumption should nurse an infant, and children ought never to be taken care of by a consumptive patient."

During the last decade tuberculosis has received more attention from the investigations of physicians and the medical press than any other disease, and its curability in a large proportion of cases established.

Dr. Vibert found that of 131 persons meeting sudden or violent death whose bodies were brought to the Paris morgue, 17 showed evidence of cured tuberculosis. Dr. Martin found 42 cases of healed tuberculosis of the lungs in 445 post-mortem examinations. Dr. Loomis found in autopsies of 763 persons dying from a non-tubercular dis-

ease 71, or 9 per cent., which presented pulmonary changes characteristic of healed tuberculosis.

These statistics would indicate that tuberculosis is quite amenable to arrest and cure.

Treatment.—In the matter of treatment hygienic measures are of primary consideration.

The importance of pure air and water, ventilation of sleeping apartments, exercise and the selection of a proper diet are obvious to every physician, and each should receive strict attention and personal supervision.

I shall not go into detail in this article regarding the value of climate and altitude as a factor in the treatment of tuberculosis.

That is generally conceded to be an important one, but it is available to only a comparatively small proportion of the number of tuberculous patients.

Regarding the diet, the idiosyncrasies of each patient should be considered. Generally speaking the patient should eat such nutritious foods as are suited to his individual taste. Such foods as are well borne and properly assimilated by him. Some may thrive on a meat diet while others would lose weight. Eggs may be well borne by one and not by another. Once having determined what kinds of food are best suited to each case, it is easy to make a choice.

From the following diet list a selection may be made of easily assimilated foods and in variety to allow of frequent change if necessary. A patient should not eat too much at one time, nor go too long a time without nourishment. When solid food is not acceptable give nourishing liquids. Never eat hearty food when excited, tired or exhausted. Rest first.

Breakfast No. 1.—6 to 7:30 A. M.—Gruel, hot milk, tea, coffee, beef tea.

Breakfast No. 2.—9 A. M.—Milk, tea, coffee; cocoa, cocoa shells, bread and butter, brown bread, toast, oat meal, hominy, cracked wheat, corn cake, Johnny cake, griddle cake, molasses, maple syrup, honey, orange marmalade, broiled tripe, eggs, scrambled, boiled, poached; salt cod-fish—broiled, picked-up, fish balls; omelet, bacon, baked potatoes, fresh meat hash, baked apples, oranges, grapes, seasonable fruit except bananas and pine apples.

Lunch—12 to 1 M.—Milk, beef tea, gruel—beef, chicken or mutton broth; clam water; milk and yolk of eggs, fruit juice and water.

Dinner—2 to 3 P. M.—Soups, meat broth, oyster broth, roasted or broiled meats with the exception of goose, duck, pork or veal; boiled mutton, boiled chicken, boiled fresh fish, lobster without dressing, chicken hashed in milk, oysters—raw, roasted, panned; potatoes (white)—mashed or baked; rice, spinach, asparagus, squash, carrots, cauliflower, fresh beets, dandelions, tomatoes—stewed or raw; celery, apple sauce, cranberry jelly, soft custard, light pudding, apple or pumpkin pie, seasonable fruits except bananas, pine apples grated, applionaris or vichy water.

Afternoon Lunch—5 P. M.—Hot milk, tea, chocolate, cocoa, beef tea, blanc mange.

Supper—6:30 to 7 P. M.—Milk, gruel, bread and milk, milk toast, dry toast, cod fish toast, bread and butter, light cakes, jellies, stewed prunes, cold meats, hard boiled and dropped eggs; sardines, light salads, curd cheese, baked apples, apple sauce, seasonable fruits except bananas, pine apples grated.

Night Cap—9 to 10 P. M.—Crackers, pretzels, zwieback, gruel, Belfast ginger ale, lager beer.

Between Midnight and 6 A. M.—Beef tea, gruel, crackers, zwieback, fruit juice and water.

A number of remedies have been suggested and many different methods devised for the treatment and cure of tuberculosis which have meet with varying success in the hands of physicians who have used them, but no method of treatment has had the success, and stood the test of time as the use of the hypophosphites as suggested by Dr. Churchill.

Oxidizable phosphorus is an element which is present in certain proportions as an ingredient in the material from which the tissues are formed in every healthy individual.

Its presence enables this material, by chemical affinity, to absorb and combine with the oxygen inhaled in the lungs.

The oxygen thus absorbed combines with the proximate materials in the blood preparing them for their metamorphosis into cellular tissue.

All substances taken into the organism are oxidized as far as possible before being eliminated. When the oxidization is incomplete the material produced will not form healthy tissue.

In tuberculosis, where, as a result of lowered vitality of the whole system, malnutrition and local conditions of broken down cell tissues, exists, waste preponderates, there is always a deficiency of oxidizable phosphorus.

This element must not be confounded with the *phosphates*, which are, so to speak, simply the detritus which is the result of combustion and which have already combined with oxygen to their fullest extent.

Dr. Churchill says: "That there is a direct connection between the excretions of the phosphates and waste of nervous elements, as proved by the fact that this product falls to its lowest point during the cessation of nervous activity, and that in the insane the excretion of the phosphates is considerably increased during paroxysms of excitement, while on the contrary it falls below par during the subsequent period of exhaustion.

The consequences of the phenomenon or feeling of exhaustion do not, however, stop at the waste of the immediately available phosphide element contained in the nervous system. As this element exists in the albuminoid principles which constitute the bioplasm or histogenic stock from which all the organs and tissues of the system are formed; as there must be a balance between the proportions of this element contained in the different parts of the system, we have a right to infer that its decrease in one part must, after a certain time, produce a corresponding diminution in the rest; and, as we have found that the phosphide element is probably the exciting and initiatory agent of intra-organic molecular combustion, whatever produces a waste of the oxidizable phosphorus in the system must diminish general molecular oxidization and the amount of excreted carbonic acid.

Every kind of activity, whether intellectual, emotional, locomotory or sensual, is therefore conditioned, either directly or indirectly, by a wear of the phosphide element, as shown by the excretion of the phosphates; and whenever this activity exceeds a certain limit the organism is no longer in a normal state."

The object sought in the treatment of disease by hypophosphites is chiefly the assimilation of oxidizable phosphorus.

The most rational method of administration, and the one advocated by Dr. Churchill, is the exhibition of the single salts of hypophosphites of lime, soda or quinia, the condition existing governing the choice.

They should never be used in combination and always in the form of a syrup, in which solutions only can they be preserved from changes due to atmospheric influences.

The salts should be chemically pure and the solution neutral. The most available preparations, and the only ones which meet every indication are Gardner's syrups of chemically pure Hypophosphites.

When failures have resulted from the treatment of tuberculosis with hypophosphites, it has generally been because they have not been used properly. To obtain the best results certain rules should be observed.

1. The hypophosphites of soda, lime and quinia are the *only ones indicated.*
2. The hypophosphites must be *chemically pure.*
3. They must *not be combined* for use in phthisis.
4. Soda is *generally* indicated in the incipient stage.
5. Lime is *generally* indicated in the second and third stages.
6. Quinia is indicated in the initial treatment of advanced cases to be followed by lime or soda later.

Soda favors expectoration; if too free lime should be substituted. Lime reduces expectoration; if cough ensues soda should be used.

7. The *maximum* quantity to be given in twenty-four hours is *seven grains*. If the patient is weak or emaciated the commencing dose should be *one grain* gradually increased.

No other drug should be given with the hypophosphites. In treating complications the hypophosphites should be discontinued. Stimulants are contra-indicated with Gardner's syrups.

Results should be obtained within two weeks. If not, the cause may be found to be you are obtaining pathogenic effects from over-dosing, or a complication exists requiring special treatment.

The treatment should be continued within physiogenic limits intermitting every third week, until the diathesis is removed, then use occasionally as a prophylactic.

CHURCHILL'S METHOD APPLIED WITH SUCCESS IN FORTY-FIVE CASES OF PHTHISIS PULMONALIS.

By T. BLANK, M. D., St. Louis. Mo.,

From *The Journal of the American Medical Association*, Feb. 27, 1897.

Too little attention has been paid to "Churchill's method" of treating consumption, although it is still the best method, and if well studied and rightfully applied, will result in a cure in a great many cases. We cannot expect much good from this method at the last moment; it must be applied early. In the incipient stage, and in the beginning of the cavernous stage, ninety cases out of a hundred can be cured by the Churchill method. But the physician in order to succeed, must study it closely.

He must be a good observer, otherwise he will fail or do harm. The Churchill method depends upon the theory of phosphology. If there is a decrease of molecular or intra-organic combustion, due to a want of the phosphide (oxidizable phosphorus) element in the bioplast (or bioplasmic principle as Churchill calls it), then the tissue breaks down and the soil for the tubercle bacilli is prepared.

That the tubercle bacillus is the cause of tuberculosis no scientific man will deny. But considering the wide distribution of the tubercle bacilli, and the many chances for infection, it is really wonderful that so many escape the disease.

Koch himself drew attention to the slow growth of the tubercle bacilli, so that in many cases they are eliminated before they have gained a foot-hold.

Now we come to the point: What is the condition that favors a foot-hold of the tubercle bacillus? It is the deficiency of the phosphide (oxidizable phosphorus) element. If this element is not present in sufficient quantity in the tissue, the oxygen we inhale with the air, is not utilized to the fullest extent, owing to a lack of oxidizable phosphorus in the organism, which acting by its chemical affinity, is necessary to secure its combination with the proximate principles of the blood; and instead of normal bioplasmic material being produced, a broken down tissue is substituted—the soil for the tubercle bacilli. The Churchill method supplies this oxidizable phosphorus in the form of chemically pure hypophosphites.

It is really astonishing to see patients improve all around, and gaining from one to two pounds per week, by supplying the long needed oxidizable phosphorus—a regular God-send, as a drink of water would be to a dying man in the desert.

But the improvement consists not only in the gain of weight, cessation of cough, night sweats, fever, etc., but in the lungs, a process is taking place most interestingly. Dead cells, broken down tissue, millions of tubercle bacilli, are expectorated; while under

the influence of the hypophosphites, new normal bioplasmic tissue is formed; tissue which will resist the bacilli, until the last one is expectorated.

I have made repeated microscopical examinations of cases, discharged as cured, and could not find a single tubercle bacillus—they were gone, though plentiful at the beginning of the treatment.

Churchill used the hypophosphites of soda, lime, and quinia. He never combined any of these. He gave but one salt at a time, because each salt has a different action, for instance, in the incipient stage, and in the second stage, where the expectoration is tight and cough troublesome, the hypophosphite of soda is indicated, because it favors expectoration, and clears the lung of dead tissue—but watch it closely; if expectoration is too free that means too rapid softening of the tubercular deposit, and then the lime salt must be given. The lime salt reduces expectoration and softening, as in case No. 23, where the expectoration was reduced from one and a half pints per day, to only a few tablespoonfuls in measure.

The action of these different salts is so distinct, that it vexes me each time I see an advertisement of syrup of hypophosphites of soda and lime together, claiming to be according to Churchill. Such statements are false; Churchill never used these salts in combination in tuberculosis pulmonalis.

The hypophosphite of quinine is given in the initial treatment of far advanced cases, and later on, the soda or lime salt is given according to indications.

Why is it that the brilliant results obtained by Dr. J. F. Churchill in the Parisian Hospitals, are not generally obtained?

This is due to several causes:

Firstly, most of the commercial hypophosphites are not chemically pure, therefore valueless.

Secondly, if the chemically pure hypophosphite salt is not incorporated with pure syrup immediately after its manufacture, it will be rapidly injured by age.

Thirdly, many physicians have given a combination of different hypophosphite salts believing that they apply the Churchill method; this is the most frequent cause of failure.

Of the forty-five cases I have treated within the past three years, I have given, following, the history of the most important, frequently giving only a synopsis of those, the history of which had been similar, or identical with those published more in detail.

I will say, that the wonderful success which has resulted from my use of the Churchill method in this disease, has so convinced me of its worth, that I shall continue its use until, as I trust, we shall be able to cure ninety-nine cases out of the hundred.

Before closing, let me express my sincere gratitude to R. W. Gardner, New York, who does so much to spread the teachings of Churchill.

CASE I. Mr. John W., East St. Louis, Ill. Date of consultation, June 18, 1893. Age, 20 years.

History.—For about a year, had complained of a cough, dry and hacking in the beginning; expectorated blood some months ago; lost considerably in weight within the last few months; there have been night sweats, but not severe; appetite failing. Examination of chest. Infra-clavicular region on the left side sunken; inspiration in this region, rough, with dry rales; expiration blowing (bottle sound); on right side, same condition; percussion, cracked pot sound.

Microscopic examination of sputum (made June 23rd.) Result, tubercle bacillus.

Treatment. Syrup Hypophosphite of Soda; (Gardner.) Dose half teaspoonful, t. i. d., after meals.

Report, July 1st, 1893. Patient feels stronger already. Expectoration not much increased, continued Syrup of Soda Hypophosphite same doses, gave eight ounce bottle.

Report, Sept. 2nd, 1893. Patient has been in Kansas City; accepted work there, as he felt strong enough to do so. Has gained in weight; appetite good during the last two weeks of August, cough has disappeared entirely. But now there is some cough again; continued Syrup of Soda Hypophosphite in half teaspoonful doses, t. i. d.

under treatment; expectoration gets a little too dry, therefore changed the medicine.

Treatment. Syrup Hypophosphite Soda, (Gardner), Dose, twenty drops, t. i. d., after meals.

Report, August 15, 1894. Has been without medicine about four weeks; felt well and strong all that time; in fact he felt so well that he considered wood-sawing in his yard, the best thing to kill time; a slight hemorrhage followed, after ten minutes' work.

Expectoration about four tablespoonfuls again; changed medicine immediately.

Treatment. Syrup Hypophosphite Lime (Gardner). Dose, twenty drops, t. i. d., after meals.

Report, August 25th, 1894. Expectoration amounts to about two tablespoonfuls during 24 hours.

Treatment. Syrup Hypophosphite Lime, in same doses, continued.

Report, Sept. 15th, 1894. Patient has gained four pounds in addition to the three pounds gained up to July 30; expectoration about one and a half tablespoonfuls during 24 hours.

Treatment. Syrup Hypophosphite Lime, twenty drops, three times, every other day.

Report, Sept. 30th, 1894. Patient is doing nicely.

Treatment. Syrup Hypophosphite Lime, same doses, every other day.

Notice. Reports up to June, 1895, a year after commencement of treatment, are so monotonous, that I leave them out.

Report, July 15th, 1895. Patient at office again; will leave for Colorado in a few days, and wants two large bottles of medicine; gave him Syrup Hypophosphite Soda, 12 oz. bottle, and Syrup Hypophosphite Lime, 12 oz. bottle. Being under treatment so long, he knows exactly when to take each, according to the amount of expectoration.

Notice. Received a letter about a month later. Therein patient states that he felt fine, and has the greater part of the medicine on hand. Through his uncle I heard that he got careless on account of feeling so strong and well, and exposed himself to unnecessary risks, and had, in the beginning of 1896, a relapse. He did not come under my treatment again, why, I know not. He died a few months after the relapse.

Cases Nos. 24 and 25 are so similar to others given, that they are omitted.

CASE No. 26. Miss W. J. A., age 24. Date of consultation, July 15th, 1894.

History.—For four years patient has suffered with cough, which was dry and hacking during the first year. Had severe night sweats last winter; lost in weight, especially within the last few months; had also a hæmorrhage last fall; feels very tired, weak, and worn out; fever in the afternoon and towards evening; headache quite frequently; glands of the neck enlarged; shortness of breath; weight, 110 pounds.

Examination of lungs. On left side, infra-clavicular region, a circumscribed catarrhal area; on the right side, infra-clavicular region, a large cavity.

Microscopical examination of sputum—tubercle bacilli in great numbers.

Treatment, July 16th, 1894. Syrup Hypophosphite of Soda, (Gardner,) Dose, half teaspoonful, t. i. d. after meals.

Report July 23rd, 1894. Patient looks better; on some days she felt really well; there is fever every evening, without chill preceding; but about two, and sometimes three times a week, she gets a severe chill and a higher fever than usual follows; there is no doubt that we have to do with two kinds of fever; one a "hectic" and the other a "malarial fever." She feels also an aching in the joints, bones, and muscles before the malarial fever appears.

Treatment. Gave quinine in solution; discontinued Syrup Hypophosphite Soda.

Report, July 26th, 1894. Patient feels a great deal better after having taken quinine mixture.

Treatment. Continued quinine mixture, to be taken every other day. On the days between, continued Syrup Hypophosphite of Soda in half-teaspoonful doses, t. i. d., after meals.

Report, August 7th, 1894. Feels well, and stronger than before; long walks no longer exhaust her; during the first few days the cough is more frequent and somewhat dry.

Treatment. Increased the dose of Syrup Hypophosphite Soda to 40 drops, t. i. d., after meals.

Report, August 14th, 1894. Patient feels stronger than at the last visit; cough is still very troublesome; expectoration amounts to about four tablespoonfuls during twenty-four hours.

Treatment. Changed to Syrup Hypophosphite Lime, (Gardner,) twenty drops, t. i. d., after meals.

Report, Sept. 1st, 1894. Patient has been without medicine for ten days; during all that time she felt well; cough and expectoration diminished; her strength is not quite as good as when she is under the influence of medicine, but nevertheless she feels ten per cent. stronger than eight weeks ago.

Treatment. Syrup Soda Hypophosphite, (Gardner,) in half teaspoonful doses, t. i. d. after meals.

Report, Sept. 10th, 1894. Feels stronger since she has taken the medicine; cough very moderate and not troublesome.

Treatment. Continued Syrup Hypophosphite Soda, same doses.

Report, Sept. 22d, 1894. Patient feels well; expectorates very little during the day; only in the morning, and that does not amount to much; gained five and one-quarter pounds since the beginning of treatment; present weight, 115¼ pounds.

Notice. Patient lost in weight during the first few weeks; my books give no record of this, but I remember the case well.

Treatment. Syrup Hypophosphite Soda, half teaspoonful, t. i. d., after meals.

Report, Oct. 24th, 1894. Has been doing nicely during all that time; during the last few days she complains of pleuritic pains; hardly any cough; has gained two pounds more; present weight 117¼ pounds.

Treatment. Syrup Hypophosphite Soda, same dose, and mustard plaster to the chest.

Notice. It would make the report too lengthy to continue the record.

Patient took the Hypophosphites steadily up to August, 1895, that is, a little over a year, counting from the day of consultation. From August, 1895, she took the Hypophosphites only occasionally. During the year 1896, she called several times at my office, feeling generally well, and working every day. The least little cough, or loss of strength, was always promptly attacked with a bottle of Syrup of Hypophosphite, and the battle ground was ours in a day or two.

It was a hopeless case of four years standing, with a large cavity already formed, as it came under my observation.

As I saw her last, I could not help thinking about "then" and "now."

The cases Nos. 27 to 45, inclusive, were similar in their general features to case No. 1, and it would be tiresome to give the histories of them in detail.

The cases I have outlined are fairly typical, and my favorable experience in the past, is now continually being repeated, as new cases come under my care; all progressing well, and may form the subject of another contribution in the future.

There can be no uncertainty concerning the diagnosis; every case was establishe beyond a doubt by the detection of the tubercle bacillus.

1607 FRANKLYN AVENUE, ST. LOUIS, DEC. 15TH, 1896.

Hypophosphites in Phthisis.—D. J. Parsons, M. D., Sweet Springs, Mo., Oct. 21, 1895, writes: "I am thoroughly convinced of the great value of the single salts of the Hypophosphites, according to Churchill's method, in the treatment of phthisis, and I cannot for my life see why it is that physicians generally do not adopt it.

I feel certain, with my limited experience, that the single salt method will cure consumption, if given early; and I further believe that it will cure in the second stage.

Gardner's Syrup of Hydriodic Acid is of immense value; it is just as certain as anything can be in many cases, and it has a wide range of application.

"I feel that the information received from your brochure, has enabled me to save several from confirmed phthisis.

Rachitis.—Amzi W. Hon. M. D., Harrodsburg, Indiana, Oct. 29, 1895, writes: "Some time ago I had a little patient, a babe, eleven months old, emaciated, and every symptom of rachitis. The child had been allowed to eat all kinds of food for three months previous, but had not gotten any milk. I at once put it on milk alone, for food, and Syrup of Hypophosphite of Lime (Gardner).

It weighed eight pounds at the time I commenced treatment; in one month it weighed twelve pounds; in two months it weighed seven teen pounds and was well."

PHOSPHORUS AND THE HYPOPHOSPHITES.

BY J. D. ALBRIGHT, M. D., AKRON, PA.

The medicinal value of phosphorus has long been recognized by all therapeutists. It stands to-day eminent as one of the most important and powerful general stimulants, excitants and reconstructives in the materia medica.

There has, however, been a serious drawback to its extensive use, that is also recognized, in the difficulty that has been found to exist in obtaining a safe, accurate and agreeable form for its administration. In its free state it is very irritating to the stomach and is also very unstable, so that it is practically impossible to administer it in this state. To this fact can be traced perhaps one of the most important discoveries, that of the hypophosphites, which embody the virtues of phosphorus, and those of the various bases which render them some of our most valued agents, which have a permanent place in the long list of remedies which have been recommended for the cure of phthisis, as well as excellent agents with which to treat nerve-exhaustion, impaired nutrition, hysteria and many forms of syphilitic and other cutaneous disorders.

Those who have given the study of the hypophosphites the most earnest attention, concur, I believe, in the assertion that the administration of the single salts are attended with the most positive and beneficial results, and as far as pertains to clinical experience, I can assert that my experience has lead me to believe likewise. I have long used the Hypophosphites of Lime, Soda and Quinia, each singly, as indicated, and I am positive that the results are much superior to those of the so-called compound hypophosphites. I find that when the indicated preparation is given, it produces no irritation, but it is taken up along with the food and carried into the economy, there to be assimilated, and supply the waste which constitutes the first link in the chain of a morbid condition.

It is in pulmonary diseases with emaciation, cough, debility, hemorrhage and the whole train of too well known symptoms of tubercular disease, that the benefits of these preparations are most apparent. It is, however, necessary that the indicated salt be given, and that a good and permanent preparation be used. The preparations which I have used, and which I consider perfect, are those manufactured by Gardner of N. Y.

They are elegant in appearance, pleasant to the taste, do not disagree with the stomach and do not in the least irritate.

In the treatment of phthisis the following should be noted. The Hypophosphite of Soda is indicated where there is cough without much expectoration, while the lime salt

should be given when expectoration is profuse, on which it seems to have a direct influence. When the expectoration diminishes too rapidly, the soda salt should again be used. It may be said that as a rule the lime salt will be preferable, especially in pregnant women or small children.

The quinia salt is of great value when there is diarrhœa, and when the lime or soda salts are too active.

Without fear of contradiction I dare to make the assertion that in the administration of the single hypophosphites we still have the most plausible, the most promising and the best treatment for tuberculosis of the lung, reports in favor of other new remedies to the contrary, notwithstanding.

To briefly add a few other indications, I will mention, sub-acute bronchial inflammation, which yields promptly to the syrup of lime salt, one teaspoonful three times a day. When there is any reason to suspect serious tissue changes in the larynx, lungs or pleura, I would suggest a course of Syrup Hydriodic Acid (Gardner's), for a week or two, and follow with the Syrup of Hypophosphite of Lime.

Many female troubles, of a nervous or generative origin, will yield to treatment with the hypophosphites, notably among which may be mentioned, amenorrhœa, dysmenorrhœa and nervous prostration.

Cases might be cited but sufficient has been said, which I hope will awaken interest, and stimulate study in this line.

"CHEMICALLY PURE HYPOPHOSPHITES: THERAPEUTICAL INDICATIONS WITH CLINICAL DATA."

EDITED BY R. W. GARDNER, NEW YORK.

Dr. Churchill in his study of phosphorus, its offices and effects in the human system, formulated this rule—"Every kind of activity, whether intellectual, emotional, locomotory, or sensual, is conditioned, either directly, or indirectly, by a wear of the phosphide element, as shown by the excretion of the phosphates, and whenever this activity exceeds a certain limit the organism is no longer in a normal state." Whenever, through artificial modes of life, such as dissipation, want of out-door exercise, excessive mental wear, emotional and excitable temperaments, poverty and unsuitable or insufficient food, the requisite amount of oxidizable phosphorus is not supplied to the blood, or its waste within the system is too great, so that the blood is not able to take up sufficient oxygen to nourish and renew the tissues, disease is the result. The researches of Dr. Churchill established the fact that oxidizable phosphorus is a necessary part of the food supply as it is found as an element of so many foods of animal origin, and also that this phosphide element (oxidizable phosphorus) must not be confused with the phosphates, for in the latter salts the P. has already fully combined with the O., and therefore phosphates are useless as oxygen carrying agents. After much study Dr. Churchill decided, as is well known to all, that the most available salt to use was the hypophosphite, in that in this salt the P. is combined with only one atom of O. and four-fifths of the phosphorus is in a combustible or oxidizable condition. He also insisted that the Hypophosphite of Lime, and that of Soda, were the best salts to use, but that each had special indications and each should be used separately and never in combination. R. W. Gardner, of New York, supplies the hypophosphites in the exact manner demanded by Dr. Churchill, made up with every attention to purity and to efficiency, and many physicians have testified to the good results obtained from these preparations when of the "Gardner make," and when administered according to the rules so carefully worked out and laid down by Dr. Churchill.—*Journal of Medicine and Science.*

SYRUP OF HYPOPHOSPHITE OF AMMONIUM.

F. A. Burrall, M. D., New York City, writes on December the 13, 1897, as follows:

"I have much confidence in the purity of your preparations and think that your Syrup of the Hypophosphite of Ammonium is a valuable addition to our list of drugs.

It is an elegant preparation and can be used as a vehicle for cough remedies such as codeine, while alone, it allays the annoying irritation which accompanies chronic laryngeal catarrh. A small bottle can be carried in the pocket and about half a teaspoonful taken when the irritation appears, simply by putting the bottle to the mouth and allowing the small dose to blend with the saliva before it is swallowed.

The relief is often immediate.

I think it will be found useful for the minor coughs of children.

It seems to me that one of its prominent features is that of a laryngeal analgesic.'

SYRUP OF HYPOPHOSPHITE OF AMMONIUM.

V. T. Smith, M. D., Detroit, Mich., writes on the date January 30, 1899, as follows:

"Some months ago at my request you sent me a sample bottle of your Syrup of C. P. Hypophosphite of Ammonium, which I took for the purpose of ascertaining its effects upon an obstinate cough which I contracted four years ago while crossing the English Channel. I had done everything for it myself without avail, and so had numerous other doctors, with no better luck. Then having read a description of your Syrup of Hypophosphite of Ammonium, I received from you a sample bottle. Before I had taken two-thirds of the sample bottle my cough had disappeared and has never returned. Now I am prescribing it daily and it has never failed me."

TISSUE BUILDERS.

By I. N. LOVE, M. D., St. Louis, Mo.

(Reprinted from the *Medical Mirror*, June, 1897.)

The medical profession has never failed to appreciate the remedies which favor and promote tissue building, which are, in fact, constructors and reconstructors. However much we may believe or disbelieve in the germ theory of disease, no one will question the fact that the well-built anatomy, kept in good repair, can resist almost any disease and if proper care along these lines is exercised, there can be no question that no one need die from any other cause than accident or old age. The thoughtful physician will admit that there should be as few interruptions as possible in the health of the growing child, and that when these interruptions do occur, a quick convalescence and rapid return to health is necessary. It may well be questioned whether following acute disease this thought is sufficiently appreciated and whether tonics and tissue builders are given in sufficient quantities. These thoughts naturally suggest the work of Dr. Churchill in developing the value of the Hypophosphites as constructors and reconstructors. The medical profession is indeed under great obligations to Churchill, for there can be no question that his ideas have done much towards successfully battling against tuberculosis and that condition which by name was made to cover so much and in reality express so little, namely, struma, the so-called scrofula, which we now know was but another name for the many forms of tubercular expression. How many children were permitted, during their period of growth and development, to suffer with

so-called scrofulous glands, "running sores," that the old time doctor thought should not be permitted to heal for fear that they would break out somewhere else? We know now that they were simply suppurating tubercular masses in the majority of instances, and that they should have been promptly removed by the knife, if not dissipated by internal medication. The remedies just referred to, by the way, will do more in the direction of upbuilding the patient, giving him the power, as it were, to absorb and scatter these aggregated disturbances than all others. To no manufacturer and pharmacist in America is the medical profession under more pronounced obligation for good work done in catering to its needs than to Mr. R. W. Gardner, the chemist, of New York City, especially in carrying out Churchill's ideas in giving us an ideal form of Hypophosphites and in the perfection of Syrup of Hydriodic Acid.

Mr. Gardner's Syrups of Hypophosphites and Syrup of Hydriodic Acid are beautiful preparations, readily received by the most delicate stomach and promptly assimilated and appropriated. Their effect in all administrations is so prompt, as to be almost phenomenal.

The Syrups are attractive in form, potent and permanent. As practitioners, we should see that the medicines are furnished to our patients in original packages in these days of substitution. A continued daily use of Mr. Gardner's Hypophosphites and Hydriodic Acid in my practice for more than ten years, certainly justifies the fullest confidence.

LIST OF GARDNER'S

Special Pharmaceutical Preparations.

Physicians who wish to be absolutely certain that their patients are using Gardner's preparations—and not substitutes—may always accomplish this object by prescribing original packages. All of his preparations are put up with a strip label over the cork, a monogram seal in wax (R. W. G.) which fastens this to the lip of the bottle. It is impossible to remove these without showing that the package has been tampered with. Consequentiy any purchaser can be assured that he is obtaining what his physician has prescribed, if he is instructed to observe this point, and the quantity prescribed corresponds to the various sizes put up.

These quantities are adjusted to the requirements of prescriptions as will be noted in the following list.

The writer would further state that he has constantly urged the use of Syrups of the Single Salts of the Hypophosphites, as being the truly scientific method of applying these remedies to diseased conditions; but the practice of the profession has been, to largely prescribe combinations, and these have been prescribed of the writer's manufacture, hence, to avoid discourtesy to the profession, he has placed such on his list, to meet this inevitable demand. The Syrups are recommended as more efficient than Elixirs.

List of Gardner's Special Pharmaceutical Preparations.

Gardner's Syrup.

Hydriodic Acid (1.28 per cent. H. I.)	16 Oz.	8 Oz.	4 Oz.
Hypophosphite Ammonium (16 Grains in One Fluid Ounce.)	16 Oz.	8 Oz	
Hypophosphite Lime (20 Grains in One Fluid Ounce.)	16 Oz.	8 Oz.	
Hypophosphite Soda (20 Grains in One Fluid Ounce.)	16 Oz.	8 Oz.	
Hypophosphite Iron (4 Grains in One Fluid Ounce.)	16 Oz.	8 Oz.	
Hypophosphite Potassium (16 Grains in One Fluid Ounce.)	16 Oz.	8 Oz.	
Hypophosphite Manganese (4 Grains in One Fluid Ounce.)	16 Oz.	8 Oz.	

Hypophosphites Lime and Soda.....16 Oz. 8 Oz.
20 Grains in One Fluid Ounce.
Hypophosphites Iron and Quinine.....16 Oz. 8 Oz.
4 Grains Iron, 1 Grain Quinia in One Fluid Ounce.
Hypophosphites Lime, Soda and Potassium.....16 Oz. 8 Oz.
17 Grains in One Fluid Ounce.
Hypophosphites Lime, Soda and Iron.....16 Oz. 8 Oz.
17 Grains in One Fluid Ounce.
Hypophosphites Lime, Soda, Iron and Potassium.....16 Oz. 8 Oz.
17 Grains in One Fluid Ounce.

Gardner's Elixir.

Hypophosphite Lime.....16 Oz. 8 Oz.
20 Grains in One Fluid Ounce.
Hypophosphite Soda.....16 Oz. 8 Oz.
20 Grains in One Fluid Ounce.
Hypophosphite Iron.....16 Oz. 8 Oz.
4 Grains in One Fluid Ounce.
Hypophosphite Quinine.....16 Oz. 8 Oz,
8 Grains in One Fluid Ounce.
Hypophosphite Potassium.....16 Oz. 8 Oz.
16 Grains in One Fluid Ounce.
Hypophosphites Lime and Soda.....16 Oz. 8 Oz.
20 Grains in One Fluid Ounce.
Hypophosphites Lime, Soda and Iron.....16 Oz. 8 Oz.
17 Grains in One Fluid Ounce.
Hypophosphites Lime, Soda and Potassium.....16 Oz. 8 Oz.
17 Grains in One Fluid Ounce.
Hypophosphites Lime, Soda, Iron and Potassium.....16 Oz. 8 Oz.
17 Grains in One Fluid Ounce.

Chemically Pure Hypophosphites, prepared expressly for this purpose, are alone used in the above preparations.

Gardner's Pills of Hypo-Quinidol. Bottles Containing 100 Pills
One Grain.

Gardner's Pills of Hypo-Quinidol. Bottles Containing 100 Pills
Two Grains.

Phosphamol Throat Tablets,
In small boxes, convenient for vest pocket.

Prepared by R. W. GARDNER, Pharmaceutical Chemist, NEW YORK.

Sold by Wholesale Druggists Generally.

Sole Distributing Agents for U. S. A., **SCHIEFFELIN & CO., New York.**

Agents for Great Britain and Ireland, POTTER & SACKER, 7 Fowkes Buildings, Great Tower St., London, England.

Agent for Australian Colonies, D. A. GREENLEES, 164 Vickery's Chambers, Pitt St., Sydney, N. S. W.

try the effect of iodine because of the specific history, and as iodide of potash had been largely used, Gardner's Syrup of Hydriodic Acid was determined upon, because of its well known purity and stableness of composition.

The results have exceeded all expectation. Within three weeks there was almost entire cessation of the pain and sensations in the feet. At the end of another month the ataxic symptoms were decidedly improving. In September there was some return of the patella reflex; and at this writing, December, it would take a close observer to recognize "locomotor ataxia" symptoms as being present.

GARDNER'S SYRUP OF HYDRIODIC ACID SUPERIOR TO IODIDE OF POTASSIUM.

Under date of March 15, 1899, C. F. Mitchell, M. D., of Cleveland, Ohio, writes:

"During my nine years' practice, I have had numerous opportunities to demonstrate the merits of Syrup of Hydriodic Acid, which is unsurpassed as an alterative. I have obtained better results with its use than with iodide of potassium, without deranging the stomach in the slightest degree. I always specify 'Gardner's,' as practical tests have proved it to be superior to all others, and the most stable. Justice prompts me to state the above facts, and you may use my name if so desired."

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CASE II.— In the practice of Dr. E. J. D., Mrs. B., age 52, developed Graves' disease from fatigue during the World's Fair. The pulse was never less than 120. There was exophthalmus and enlargement of the thyroid gland. Nine months' treatment with Gardner's Syrup of Hydriodic Acid in two dram doses three times a day caused complete cessation of all symptoms, with no return after a lapse of two years.

CASE III.—Practice of Dr. E. J. D., Mrs. W., age 30, developed Graves' disease from some unknown cause. Her symptoms were moderate, pulse 100 thyroid slightly enlarged, exophthalmus not marked. Thyroid extract seemed to aggravate the symptoms. Gardner's Syrup of Hydriodic Acid, two dram doses three times a day caused a disappearance of all symptoms.

CASE IV.—Chas. M., age 28, employed in steam laundry. Complained of swollen and tender knee joints and ankles. There was some redness over the ankles with slight œdema. He was given Gardner's Syrup of Hydriodic Acid in two dram doses three times a day. After remaining in bed two weeks he resumed work and has no return of symptoms. He was treated for a term of five weeks.

CASE V.—James Z., age 38, laborer, has suffered from asthma for nine years. He has been unable to work for nearly fourteen months. He was placed upon Gardner's Syrup of Hydriodic Acid in one dram doses four times daily. After several weeks' treatment he had improved enough to resume work and now after three months' treatment, says he has had no return of his former trouble.

RENAL TORPOR, CHRONIC CONSTIPATION, CROUPOUS PNEUMONIA

George Frederick Laidlaw, M. D., of New York City, on Sept. 28, 1898, writes as follows:

"For over two years I have been using your preparation of Hydriodic Acid and find it the most active and elegant preparation of iodine that I have ever used.

I have used it in urinary work, carefully controlling the action by repeated urinary analyses, and I am delighted with the uniformity and certainty of its action.

In cases of renal torpor, I have repeatedly increased the excretion of urea and phosphates by the administration of Gardner's Syrup of Hydriodi Acid in doses of one dram three times daily.

In chronic constipation, it is curative.

In croupous pneumonia, Hydriodic Acid will promote resolution."

LOCOMOTOR ATAXIA.

BY HENRY CHANDLEE, M. D., BALTIMORE, MD.

(From the *American Medical Monthly*, Jan., 1899.)

The possibility of relief in this dreaded disease when taken in hand early and in which there is probable specific cause, is well illustrated by the following case:

Mr. G., aged 41, applied to the Nervous Clinic of the Southern Homœopathic Dispensary, early in June, 1898. Eighteen years before, he had contracted syphilis, the case apparently yielding readily to treatment, and since then he had had no further specific symptoms until the beginning of the present trouble, about eight months ago.

The condition was as follows: Loss of tendon reflex in both legs, fugitive pains in legs and back, irregular gait, feeling in feet as if walking on balls, loss of appetite (possibly from medicine taken).

Nux vomica in the course of a few weeks produced some alleviation of the pains and a decided improvement in the gastric symptoms. At this time it was decided to

patients are to have a plain but nutritious diet. The use of inunctions should only be resumed at the end of two or three weeks after the appearance of stomatitis. The syrup of Hydriodic Acid I give continuously. After a certain length of time I give the patient a tonic course of iron, strychnine, arsenic, quinine, cod liver oil and Hypophosphites and mercauro. Half-way measures are of no avail in the treatment of brain syphilis. Yvaren has well said that our treatment must be as energetic as the disease. The physician should first make sure of his diagnosis, then map out his line of treatment and stick to it with bull-dog pertinacity. Pursued in such a manner as this, no disease can give more gratifying results in its treatment than brain syphilis.

HEPATIC CIRRHOSIS.

A. Dietrich, M. D., Dufur, Oregon, writes under date December 9, 1897, as follows:

"I had an opportunity to prescribe your Syrup of Hydriodic Acid in a severe case of hepatic cirrhosis. Though the gastric disturbance generally attending the malady was very great up to that time, the remedy was surprisingly well retained and its beneficial effect became manifest in a few days.

I am more than pleased with its action in this case and shall prescribe it whenever indicated."

GRAVES' DISEASE, ASTHMA AND SWOLLEN JOINTS WITH ŒDEMA.

By A. H. BOLER, M. D., Chicago,

Late Resident Physician Mercy Hospital.

(Reprinted from the *Chicago Medical Recorder*, August, 1898.)

One of the best alteratives known to medicine is probably iodine and at the same time it is one of the most difficult to administer on account of its irritant character.

Gardner's Syrup of Hydriodic Acid is a preparation of iodine which in a large measure eliminates this caustic property and renders the exhibition of iodine comparatively easy.

It has all the antiseptic properties of iodine and all its alterative principles, is rapidly absorbed, passing into the blood in a short time. The iodide of potassium has long been the most common method of administering iodine, but in this combination we have a union of two irritating substances.

Hydriodic Acid Syrup is pleasant to the taste, is non-irritating, does not interfere with digestion and may be used indefinitely without producing depression. It may be given in any case where iodine is indicated. The list of ailments in which iodine is used is long, but a few varied cases in which Gardner's Syrup of Hydriodic Acid was used are here reported.

Case I.—This occurred in the practice of Dr. E. J. D. Miss M., age 18, suddenly developed Graves' disease from shock produced by the sudden, unexpected death of a brother. The symptoms were aggravated, the case being extreme. Pulse 130 during sleep. Exophthalmus and enlargement of the thyroid gland moderate. There was slight tremor throughout almost the entire body. Gardner's Syrup of Hydriodic Acid was given in two dram doses, three times a day for one year, with complete restoration to health. She is now married and has one child. There has been no return of any of the symptoms.

aphasia, agraphia, alexia, or word blindness, and all of these may come or go in a random way. With these are mingled amnesia, abulia, impairment of association and lack of apperception. Somnolence is often present combined with nocturnal headache, made worse by pressure on the skull. Vertigo, too, is often present. The patient's capacity for exertion is reduced. He is morose and irritable. His face has a stupid and expressionless aspect. He becomes more and more melancholic and soon develops delusions of suspicion, imagining that every one knows and talks about his disease. In some cases suicidal mania develops. Hallucinations of hearing, taste and smell are pronounced. In the writer's experience delusions of grandeur, such as we find in paretic dementia, are pronouncedly absent in syphilitic dementia. Another characteristic is what Erlenmeyer terms the partiality of the defects. Musicians lose their nicety of touch, book-keepers their power of calculating and artisans their deftness. Only certain mental functions are harmed and others left intact. One of my patients lost his fluency in a foreign language, and his memory for recent events and his volition were slightly impaired. As in nearly all forms of brain syphilis, the disease progresses by jumps, symptoms appearing and disappearing and mixing with new ones. Pathognomonic of brain syphilis is its course, especially in this form, the disease progressing by jumps. Intermissions occur in which the patient is in a state of comparative health or improvement.

Ocular palsies are frequent in many cases, as well as the Argyll-Robertson pupil, mydriasis, myosis, ptosis, etc. We may have amblyopia, optic neuritis, etc. Apoplectiform and epileptiform attacks are common. The delusions from which the patient suffers are unsystematized and the disease frequently simulates the phenomena of paretic dementia, for which it is often mistaken by incompetent diagnosticians. It can easily be distinguished, however, from paresis by the absence of delusions of grandeur and by the presence of numerous focal symptoms occurring in random order. The following phenomena are peculiar to both focal and diffuse forms of cerebral syphilis. 1, sudden shifting of symptoms; 2, the predominance of cranial nerve palsies; 3, the multiplicity of palsies along with their coming and going; 4, the loss of particular accomplishments; 5, the concomitant appearance of symptoms due to destroying lesions of various cortical areas, *e. g.*, left hemiplegia with aphasia or brachial or crural monoplegias, etc; 6, the sudden coming or going of apparently fatal symptoms, such as coma, followed by perfectly lucid states; 7, the comparatively rapid termination in dementia. In the treatment of brain syphilis there are only two sheet anchors, mercury and the iodids. The writer uses mercury in the form of an inunction, rubbing in from one-half to one dram daily for a period of about three weeks. I intermit this treatment when salivation appears, which can be greatly retarded by carefully cleansing the teeth every three hours. I no longer torture my patients by giving them the ordinary iodids of potassium or sodium, for I have never yet seen a single patient who could tolerate the enormous doses of these salts which we find necessary to give in cases of nervous syphilis. I find their administration to be followed by great anorexia, headache, malaise, diarrhea, coryza, cutaneous eruptions, etc.

But the iodids are necessary in some form, owing to their destructive action upon luetic exudates, and their stimulating action upon the lymphatic and glandular systems. So, for the last three years I have been using, with most gratifying results, the excellent syrup of Hydriodic Acid made by Mr. R. W. Gardner of New York.

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This class of patients are often morose or irritable or even pronouncedly melancholic. They are, in my experience, the only syphilitics who become maniacal. In some cases we have to deal with a marked disturbance of ideation, apperception and memory. The patients sometimes seem to have their volition impaired, suffering in a marked degree from abulia. When these cases are untreated or improperly treated, the fits increase in number, consciousness becomes more and more beclouded until the patient becomes comatose, involuntarily evacuating urine and feces, respiration and pulse becoming more and more feeble, until finally death ensues. In this form of brain syphilis, as in many others, we frequently find polydipsia, polyphagia, mellituria and even hemoglobinuria. These last symptoms point to involvement of the bulb. Nearly all cases of cerebral syphilis are accompanied by morbid mental phenomena. The patient may merely have a morbid fear of syphilis, or he may become a chronic hypochondriac and imagine that he is afflicted with a new disease every day. The psychoses of weakness or depression are characteristic mental symptoms in these maladies. Stuporous dementia or hallucinatory confusion are often found in the earlier stages of cerebral syphilis. In the last mentioned variety hallucinations of hearing and sight are especially prominent, particularly the former. The patient may imagine that he hears his neighbors and the public in general speaking about his disease, saying that he is rotten, that he should be shot, drowned or hung. He imagines that on this account he is worthless, that he should be done away with, or that his family are conspiring to do so. In some of my cases auditory hallucinations have been among the most persistent and intractable symptoms. In many cases patients who were formerly very neat and tidy became very slovenly and filthy in their attire and extremely neglectful of all their personal interests. In some of my cases I have also noticed a peculiar weak and bleating tone of voice.

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that cerebral pathology has advanced sufficiently to show the relations between certain definite lesions, their locations and extent and the symptoms produced by them. So we adopt the following classification: 1, Syphilis of the base. 2. Syphilis of the vertex. 3. Syphilis endarteritis, which can be either basilar or vertical in situation. 4. Mixed forms, being both basilar and vertical in location, and consisting usually of both specific endarteritis and meningitis. 5. Meningo-encephalitis corticalis syphilitica. There are certain general symptoms common to nearly all varieties of brain syphilis. Headache, especially in the earlier stages, is one of them. It is dull and diffuse and is worse at night in some cases. Sometimes it is referred to the vault, at others to the base of the cranium. This is soon followed by insomnia, doubtless due to the continued pain. Vertigo develops in many cases, and may be complicated with nausea and vomiting. These patients are morose and irritable. In cases where a syphilitic endarteritis predominates, the patient is just in the opposite condition. He is drowsy or even stuporous, going to bed early and staying late; those working at sedentary occupations falling asleep at their work. In some cases this state deepens into a veritable coma (Buzzard's syphilitic coma), where the patient can only be aroused by energetic shaking, answers a few questions in monosyllables, and on being left alone sinks again into a deep stupor. In some cases the patient is unable to attend to the most pressing demands of nature, such as micturition, defecation, etc. The countenance of the patient often shows a stupid or expressionless aspect, owing to the obliteration of the characteristic lines of facial expression. In many cases of cerebral syphilis we have found a pronounced cardiac and gastro-intestinal irritability and a condition of vasomotor paresis of the cutaneous arterioles. These were especially pronounced in cases where there were signs of cortical involvement.

It is known that gummatous meningitis more frequently involves the base than any other part of the brain. The gelatinous exudate is more frequent about the optic chiasm, the interpeduncular space, pons and oblongata, obscuring and enveloping cranial nerve roots. They become infiltrated with the exudate and often the vessels supplying their nuclei become affected, thus producing a thrombosis and softening of them. The cranial nerve palsies of brain syphilis are numerous, but the optic and ocular nerves are especially involved. It is, therefore, common to meet with ptosis, unequal pupils, strabismus, etc., as a result of the involvement of the third nerve. Involvement of the optic nerves produces contractions and irregularities of the visual field.

There may be a bi-temporal hemianopsia due to involvement of the chiasm, or a lateral or homonymous hemianopsia may be present. In 100 cases of brain syphilis, Uhthoff found the oculomotor involved 34 times, the abducens 16 times, the patheticus 5 times and the trigeminus 14 times. Pupillary disturbances are found, such as the Argyll-Robertson pupil, loss of both light and convergence reflex and the hemiopic pupillary reaction. Optic neuritis of the acute type is often present. Blindness is present in some cases, due to excessive pressure upon the optic tract. Neuralgic pains are met with in the trigeminus area, or anesthesia, or hyperesthesia may possibly occur.

Loss of smell, or hallucinations of smell, and loss of taste or hallucinations of taste, occur from pressure upon the olfactory or gustatory nerves, or irritation of their cortical areas by pressure of the specific exudate, at the base. Facial palsy may result from involvement of the facial nerve. Deafness rarely occurs from affection of the auditorius. The roots of the eighth pair of Willis are involved in some rare cases. In many of the mixed cases there are symptoms of involvement of the arteries of the base, due to a concomitant syphilitic endarteritis, especially of those arteries supplying the basal ganglia, the internal capsule, the motor areas, etc. These symptoms are most usually due to thrombosis. The symptoms are very sudden, the hemiplegias and monoplegias developing slowly without loss of consciousness. Another characteristic of palsies of this kind is their ephemeral character, coming and going as the thrombosis caused by the syphilitic endarteritis increases or diminishes. The hemiplegia of syphilis

meningeal or cerebral, but only those tissues of mesoblastic origin are involved *per se* by the luetic process.

When the bones of the cranium are affected, we either find a simple sclerotic or gummatous periostitis. There may be a gummatous osteomyelitis and the inflammatory atrophy of Virchow (caries sicca). When the dura is involved we have to deal with a pachymeningitis externa or interna combined with a gummatous meningitis. The gummata occupy by preference the processes of the dura. More usually gummata are found in the subarachnoideal space. They are whitish-red, grayish or grayish-red masses. They are diffused or circumscribed, but are never sharply demarcated from the neighboring brain substance, which is usually in a state of white or red softening. They undergo caseation from the center to the periphery, slowly becoming changed into yellowish masses. On the convexity of the brain they cause adherence of the meninges to each other and to the softened brain tissue. At the base adhesions are rarer, and usually instead of gummata we find a gelatinous grayish exudate, similar in extent and appearance to that of a tuberculous meningitis. If the syphilomatous mass is absorbed there is left a thickened cicatrix. It is rarely or never that we find gummata in the brain substance proper without any anatomic connection with the meninges. We often meet with diffuse encephalitis, more particularly of the cerebral cortex.

One of the most important lesions of cerebral syphilis, one that does most damage to the circulation and nutrition of the brain, is that form of endarteritis first described by Huebner, which involves largely the endothelium of the interna along with an exudate of leucocytes from the vasa nutritia, which together form a new growth, ultimately obliterating the lumen of the vessel affected. Those of the base are usually involved and especially the arteries of the fossa of Sylvius and corpus callosum. Softenings are naturally produced in the areas supplied by these obliterated arteries. This more particularly is found in the nucleus lenticularis and caudatus. The cranial nerves are also often affected through the shrinking of basilar exudates.

It is claimed by some authors that no definite lesions can be found post-mortem in some cases of cerebral syphilis. There may be some truth in this, and we think it is especially so of those cases of brain disturbance which sometimes occur in the earlier stages of the disease. The writer recalls two cases of syphilitic coma occurring before and during the first cutaneous manifestations, which can only be explained by assuming the presence of cerebral intoxication, due to intensity of infection. Broadly speaking, we can say that there is a certain relation between the location of the lesions and the resultant symptoms produced by them. So can a gummatous lepto- or pachymeningitis produce symptoms of cortical irritation, especially of epilepsy, often accompanied by mental disturbance. Occlusion of the larger arteries often produces the characteristic symptoms of syphilitic coma or symptoms due to thrombotic ischemia of cortical or subcortical areas, such as brachial or crural monoplegia, facial palsy, amnesic or ataxic aphasia, etc.

A gummatous basilar meningitis gives us an interesting mixture of cranial nerve palsies, accompanied by hemiplegia. Alternating hemiplegia of the ocular type accompanied by ptosis is very common in basilar syphilis. In fact, ocular palsies are so common in cerebral syphilis that Ricord used to say: "*Un paralysie oculaire c'est en quelque sorte la signature de la vérole sur l'œuil d'un malade.*" Many endeavors have been made to properly classify the syndromes characteristic of brain syphilis. Huebner, in his classic article, divides them into the following forms: Psychical disturbances with epilepsy, incomplete paralyses (seldom of the cranial nerves) and a final comatose condition of short duration; genuine apoplectic attacks with succeeding hemiplegia in connection with peculiar somnolent condition occurring in often repeated periods and generally at the same time paralyses of the cerebral nerves. Lastly, he distinguishes forms with a course similar to that of paretic dementia.

Fournier distinguishes six different forms: 1, the cephalalgic; 2, the congestive; 3, the epileptic; 4, the aphasic; 5, the mental; 6, the paralytic. These classifications have both performed splendid service in the study of cerebral syphilis; but we believe

The report, in your Fifteenth Edition, by Dr. T. Blank, of St. Louis, Mo., of his marvelous success in the use of your Syrups of the Hypophosphites of Soda and Lime, uncombined, as occasion required in cases of phthisis, has attracted my attention.

The undersigned has also realized great success in steady perseverance by similar treatment. Such cases are not benefited by combining the Hypophosphites and incompatible compounds.

It is absolutely necessary to obtain the genuine article required and not be put off as is often the case by something else 'that is just as good,' to the detriment of both patient and physician."

CHRONIC BRONCHITIS WITH PROFUSE MENORRHAGIA.

H. R. Barton, M. D., Easton, Md., writes under date March 19, 1897, as follows: "I have used your Syrup of Hydriodic Acid in a case of chronic bronchitis with profuse menorrhagia. The result is very satisfactory, cough is not near so troublesome and expectoration much easier and less. The menorrhagia is better by 50 per cent., appetite is much improved. I might add, she had been suffering a great deal from nausea with vomiting medicine and food for some time before I was called in; now the nausea is about gone. While the relief of the nausea was passive, yet it shows me that there is nothing irritable about Syrup of Hydriodic Acid (Gardner) and can be borne by a very weak stomach.

I am much pleased with it and am giving it in a chronic case of gleet also."

CEREBRAL SYPHILIS AND SOME OF ITS MENTAL ASPECTS.

By ARTHUR E. MINK, M. D., St. Louis, Mo.

Professor Mental and Nervous Diseases, College of Physicians and Surgeons; Neurologist to the Baptist and Woman's Hospitals; Clinical Lecturer on Neurology, City Hospital; Formerly Physician to the New York City and King's County Insane Asylums.

(Reprinted from *The Journal of the American Medical Association*, July 2, 1898.)

The complicated manifestations of brain syphilis, when given their proper interpretation, are of the utmost value to the student of scientific medicine. Nature, working in her own laboratory with its marvelously delicate adjustments and contrivances, is continually performing a series of brain experiments which infinitely surpass those performed by man with his crude and clumsy technique.

The syphilitic neoplasms are of such an ephemeral character, coming and going, here to-day and there to-morrow, that they frequently give us the opportunity to study in one and the same case all of the kaleidoscopic and complicating phenomena of focal and diffuse, destroying or discharging lesions, present simultaneously or successively. It is just this lack of order, this protean appearance and disappearance, which is characteristic of the phenomena of cerebral syphilis. So we may meet with cases which up to a certain time have shown signs of focal involvement only, and then develop suddenly symptoms of syphilitic melancholia, hallucinatory insanity or dementia; or, on the other hand, we may meet with cases which have shown for a long time only the mental phases of cerebral syphilis, suddenly develop hemiplegia and ataxic aphasia in an apoplectiform attack. Again we meet with cases in which the history and examination show the presence of focal and diffuse, destroying and discharging lesions side by side and complicating each other. The lesions of cerebral syphilis are either osteal,

ASTHMA AND BRONCHITIS, TERTIARY SYPHILIS, CHRONIC RHEUMATISM.

By ROBERT C. KENNER, M. D., Louisville, Ky.

(Reprinted from the *Medical Progress*, April, 1896.)

* * * Some time ago I had my attention called by Dr. Shoemaker to the Syrup of Hydriodic Acid as the most eligible form of iodine. He insists, of course, that this shall be pure. I am now in the habit of using the Syrup of Hydriodic Acid whenever I desire to use the iodides. It has never, in any case, disappointed me when I had the genuine Syrup, made by R. W. Gardner, who has devoted the best part of his time for years to the preparation and supply of a pure, stable and reliable preparation of this Syrup. His success in the accomplishment of this purpose has been attested by some of the best therapeutists in this country. * * * I have used this Syrup in a variety of diseases and have had good results. I will give a few cases in which it has been employed with most marked benefit:

Mrs. S., suffering from asthma, but had no cardiac trouble. She was put upon Syrup of Hydriodic Acid and the most marked improvement followed its use. The bronchitis which was present in her case was cured. I never obtained better results from any drug than in this case. As a precaution to secure the genuine Gardner preparation, I ordered it in four ounce bottles and specified the Gardner preparation and advised my patient to see that the bottle came up to the description, and had not been tampered with. This is an important thing to do and it will prevent substitution.

Benj. B., suffering from tertiary syphilis, was put upon Syrup of Hydriodic Acid. He had skin disease and suffered with pain in the legs. After a sufficient course of Hydriodic Acid, his symptoms began to disappear and his cure followed. The iodide of potassium did not agree with him, and no improvement under it could be obtained. In this and many other cases this Syrup answered when iodide of potassium failed, or was not appropriate on account of its disagreeable and irritating qualities.

Mr. B., suffering from chronic rheumatism, was put upon Syrup Hydriodic Acid. He had no arthritic trouble, but was subject to invasions of various joints by the rheumatic deposit. The Syrup Hydriodic Acid in conjunction with cod liver oil entirely cured the patient. I could detail many other cases did my limits permit.

SYRUP OF HYDRIODIC ACID IN GOUT.

John Cooper, M. D., M. R. C. S., Brooklyn, N. Y., writes on the date of May 26, 1898, as follows:

"The undersigned has frequent occasion to avail himself of your well-known preparations for their therapeutic value.

Having, from your Syrup of Hydriodic Acid, derived so much benefit in the treatment of acute and chronic gout, as in rheumatism, bronchitis, asthma and glandular enlargement.

Lately an old gentleman suffering from chronic gout, being unable to walk a short distance without considerable pain in the soles of his feet, was put under treatment with drachm doses of Syrup of Hydriodic Acid in two-thirds of a tumbler of water, early in the morning, and at bed-time; as he improved, then only in the morning; which was continued about three months, when he could walk miles without suffering: during the treatment it was discovered that he had an enlarged prostate, becoming troublesome; the means used for his gout had such a beneficial effect upon the gland that it ceased to give him any annoyance.

spinal palsy, involvement of the bladder and rectum, exaggerated knee and ankle jerks; slight disturbance of sensation, spastic gait, etc. These were preceded by some of the characteristic symptoms of brain syphilis. Has been under my care for three months, and is making a steady improvement under mercurial inunctions, hypodermic injections of cyanide of mercury and Syrup of Hydriodic Acid.

S. B. Coachman, aged 35 years, has had syphilis for twelve years. Three years ago he was attacked with epileptic convulsions of the Jacksonian type. There was oculo-motor palsy, transitory aphasia and hemiplegia. He became profoundly melancholic and suicidal. He came under my care about fourteen months ago. Gradually improved under energetic mercurial treatment followed by the administration of the Syrup of Hydriodic Acid.

These are a few cases taken at random from my case book. During the last year I have treated 58 cases of cerebro-spinal syphilis upon the lines above laid down, with the most satisfactory results.

We must remember that syphilis puts a stamp of its own upon the nervous system. We should warn the patient that his nervous system is henceforth a place of least resistance, and that he should treat it accordingly.

"GARDNER'S SYRUP OF HYDRIODIC ACID: THERAPEUTICAL INDICATIONS WITH CLINICAL DATA."

EDITED BY R. W. GARDNER, NEW YORK.

Experience, that dear school in which we are all compelled to be learners, has taught us that iodine is one of the most useful and most used remedies in the Pharmacopœa. Almost numberless are the diseases and the conditions in which this drug has been proved to be of service. Yet, great as is the field which this medicine covers, there are some things about the drug that are not so pleasing as we could wish. The salts of iodine, formerly in general use, are so irritating as to disturb the stomach and greatly to interfere with the nutrition of the patient.

Mr. R. W. Gardner, the pharmaceutical chemist, of New York, was the first to attempt to remedy this evil and to give the medical profession a preparation of iodine which was stable, efficient, and non-irritating. This investigator, taking cognizance of the fact that the natural secretions of the body, are, in their make-up, to a large extent, aqueous, and that water is made up of hydrogen and oxygen, and that therefore hydrogen is a natural element and component of the liquids of the body, and the solvent of substances absorbed and eliminated, determined to make hydrogen the base of a new iodine preparation. The result of all this study and work was the production of a remedy—the iodide of hydrogen or hydriodic acid—which is non-irritating, active and palatable. Gardner's Hydriodic Acid was the first put upon the market, it has stood the test of time and has been found to possess all the antiseptic and all the alterative properties of iodine. To Mr. Gardner belongs the credit of having introduced this valuable remedy in an attractive and stable form His Syrup of Hydriodic Acid is the best remedy for use in the diseases for which iodine and iodide of potassium were formerly used, and it has also been proved to be of great value in many diseases in which these other drugs exert little influence. It is of use in all conditions where an internal antiseptic is indicated. Many physicians have testified to its efficiency as an ideal antiseptic in diseases of the genito-urinary tract,—as cystitis, pyelitis, and the uric acid diathesis. In chronic pulmonary affections it has come into general use, and many advocate its administration in that obstinate disease, hay-fever. In ophthalmic goitre, hydriodic acid has cured where all other remedies had failed. In chronic rheumatism, and in the strumous, syphilitic and tuberculous diathesis this form of iodine has largely superseded the use of the other salts of iodine.—*Journal of Medicine and Science.*

in the elimination of the products of retrograde metamorphosis by stimulating the activity of the skin and kidneys. Alcohol and tobacco, tea and coffee, are prohibited, and the diet should be plain, nutritious and easily digestible. In some cases, where the patient is of robust constitution, I prescribe a very sparse diet in order to facilitate a destructive tissue change. After the patient has had a thorough course of mercurial inunctions, I formerly followed it with a course of the iodide of potassium or sodium, but recently I have concluded to abandon their use for the following reasons: Nearly all patients afflicted with syphilis of the nervous system, are afflicted with great cardiac and gastro-intestinal irritability. Now, it is necessary in employing these salts to give large and gradually increasing doses, and we rarely fail to see in most cases a disturbance of the heart and gastro-intestinal tract brought about. This, along with the unsightly skin eruption, and the fact that many patients suffering from a most pronounced nervous syphilis, are unable to bear the smallest dose of these salts, have induced me to look about for a substitute. As a result of my search I have been led to use Gardner's Syrup of Hydriodic Acid, which I believe has all of the advantages and none of the drawbacks of the iodides of potassium or sodium. It agrees better with the stomach, has no depressing influence on the heart, and produces no skin eruption. I have been using it for the last two years with the most gratifying results. The following are a few cases taken at random from my case book:

W. G., age 59, and a watchman by occupation, became infected with syphilis thirty years ago while in the army. Was treated somewhat for it, but the secondary symptoms were very light, and apparently soon disappeared. About ten years ago he commenced to have violent attacks of nocturnal headache, vertigo, insomnia, etc., along with transitory brachial and crural monoplegias, oculo-motor palsy and aphasia, in short, with all the random grouping of symptoms characteristic of brain syphilis. These symptoms, after coming and going, gave place to a profound syphilitic melancholia, which in its turn was followed by hallucinatory insanity. Visual, and especially auditory hallucinations predominated. He had a pronounced delirium of persecutions. He thought that people and even children pointed at him and said: "There goes old Syphilis! He is rotton with the pox!" He heard voices on all sides crying "hang him!" "mob him!" drown him!" and in his despair to escape his persecutors he jumped into the Mississippi river, from whence he was rescued and taken to the City Hospital. The writer being called, pronounced it a case of syphilitic insanity, and prescribed mercurial inunctions. He improved so rapidly that at the end of two weeks he was removed to his home where he came under the writer's immediate care. The inunctions were continued for some weeks, and then alternated with Gardner's Syrup of Hydriodic Acid, and a tonic pill composed as follows:

℞ Auri et sodii, chlor., gr. ij.
Strychnia sulph.,
Acidi arseniosi, aa gr. j.
Ferri pyrophos.,
Quinia sulph., aa ʒ j.
Ext. gentian q. s. ad pil no. xxx.
Sig. One t. i. d. after meals.

This treatment, along with hot baths and the bromides and sulphonal for insomnia, when necessary, was continued persistently for over a year. He made a gradual improvement, and is at present almost entirely well.

C. H., aged 39, and a physician by occupation, became infected ten years ago About 2½ years ago he developed nocturnal headache. During the day he suffered from vertigo and drowsiness, impairment of memory attention, ptosis and diplopia, with shifting monoplegias. Came under my care five months ago. Treatment, mercurial inunctions, alternating with Gardner's Syrup of Hydriodic Acid along with iron, quinine and arsenic. Is now entirely well.

D. L., aged 57, and grocer by occupation. Has had syphilis for twenty years. Six years ago he began to manifest the symptoms of Erbs so-called type of syphilitic

were the favorite antiasthmatic remedies, and even now the iodid monium and sodium are favorites, but with all the iodides we get the hydriodic acid which is the active element of all the salts. We can certainly obtain all the benefits of iodine from a properly prepared Syrup of Hydriodic Acid, and we have of late years pretty much discarded the iodine salts for the syrup, and the form we are best acquainted with is that known as "Gardner's Syrup of Hydriodic Acid."

THE TREATMENT OF SYPHILIS OF THE NERVOUS SYSTEM.

By ARTHUR E. MINK, M. D., St. Louis, Mo.

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(Reprinted from the *American Journal of Dermatology and Genito-Urinary Diseases*, July, 1897.)

There are two important points to be kept in mind in the treatment of syphilis of the nervous system, viz., the introduction of remedies in the body which induce destructive tissue metamorphosis, and so destroy the cellular proliferation characteristic of syphilis, and, second, by the introduction of other remedies and by the regulation of food and environment to induce a constructive metabolism, which will more than make up for the destructive tissue changes. It is off with the old and on with the new. The writer has within the last few years treated a large number of cases of syphilis of the nervous system, including syphilitic insanity, and a summary of my experience derived from the treatment of these cases may not be devoid of interest to the general practitioner. There are several factors which have an important bearing upon the success or failure in the treatment of nervous syphilis. Among the most important are: freedom from neuropathic taint, duration of symptoms and length of time elapsing since infection along with severity of secondary symptoms. Patients with a neuropathic constitution always have the severest manifestations of nervous syphilis, and are least liable to derive any permanent benefit from treatment. The sooner a patient is treated for nervous symptoms the more satisfactory are the results, and, on the other hand, the longer a patient has been infected the graver the outlook. My experience has also led me to believe that there is a certain relation between the severity of primary and secondary stages and the intensity of the nervous manifestations in tertiary stages. I find those cases in which the primary and secondary stages were severe, to have milder nervous symptoms and are more amenable to treatment than those where the earlier stages were mild. The physician in treating syphilis needs patience, persistence and boldness.

After first assuring himself that his diagnosis is correct, he should proceed to combat the symptoms with all of his energy. Half way measures are of no avail. The more severe and numerous the symptoms the more heroic should be our treatment. If the patient has an occupation which entails great mental, nervous, or physical strain, it is interdicted where possible, and rest with only passive exercise enjoined.

I then gave him an inunction of a drachm or half a drachm of gray ointment, to be rubbed in at bed time. This is to be repeated every day until salivation occurs. By carefully cleansing the teeth every few hours the mercurial stomatitis can be greatly retarded. The patient is also required to take a Turkish, hot water or air bath, at least every other day, and is required to drink plenty of water, preferably hot; to assist

We have great dread of the hypodermic use of morphia, even with the present accurate triturate we use now, and experience and observation render us more chary of its use each year. It does for new-made graduates who usually carry a thermometer and hypodermic syringe in their pockets, but after 20 years they learn to dread the syringe and to know pretty well the temperature from tact and from the increase of pulse. An old gentleman, asthmatic, manager of a large hotel in Baltimore, suffered since manhood from asthma spring and fall just at the time of the equinoctial storms. Every remedy in turn gave relief for a while. In one attack the usual drugs failed him, and the writer gave him 40 grains of kalium iodide for three doses. It was a serious case and required heroic doses. Nothing else relieved him so rapidly he said, and here the hydriodic acid was developed from the potassic iodide—no bad effects. We know persons who cannot tolerate any of the iodine salts, but who can take the syrup with impunity from iodism. The syrup is soonest eliminated through the kidneys after relaxing the spasm in asthma, and in this affection, as in whooping-cough, it is prompt to relax, as is chloroform or tartar emetic, and leaves behind no prostration as do these drugs.

Some pathologists suppose asthma to be due to edematous swelling of the bronchial membrane, while others ascribe it to reflex spasm of the muscles of inspiration. In either event, like as we have stated our belief to be in the spasm of the involuntary muscles of the bronchi, the remedy lies in the Syrup of Hydriodic Acid. It is an antispasmodic, and surely in the event of the other two theories of inflammation of the bronchiales or of swelling of the bronchial mucous membrane we require some drug which will soonest absorb the elements of that inflammatory swelling, and this syrup is the one which accomplishes this par excellence. In hypertrophy of the heart and in cardio-plastic deposits we have a fine combination of digitalis with the hydriodic syrup, and in the gummy and other late manifestations of syphilis we may safely substitute this preparation for the iodine salts, and we may give it in free doses, supplementing our treatment with the inunction every second day with two drams of the blue ointment of mercury on the abdomen or on the inside of the thighs, alternating now and then so as not to cause irritation of the skin from the ointment. We have in fatty heart a fine agent with two or three drops of Fowler's solution, so praised in weak heart by Balfour. In the clearing up of inflammatory deposits, and indeed in the height of inflammations of asthenic nature, we have the effort of nature to rid the system of abnormal products, as ptomaines, urates, uric and lactic acids, decomposed bile, oxalates, dextrose and albumen, which so pervert the nervous mechanism as to benumb its power of action. We know nothing better than this syrup in decomposing and clearing out these poisoning elements from the circulatory system. It is a drug which has passed its period of probation, and like a few other standard remedies, has passed into one of certainty. It is an active agent in increasing the activity of the organs whose duty it is to eliminate the effete materials of the blood and of the secretory glands and in removing the scrofulous elements which give rise to swellings and abscesses of the lymphatic glands. It has great effect in reducing inflammatory action in the various tissues of the serous membranes, as in pleurisy, in meningitis, in peritonitis, hydrocele, pericarditis, hydrocephalus, in arthritic collections about the joints and in dissolving the uric acid crystals in gout, and the lactic acid deposits in chronic rheumatism, as well as in resolving the thyroid induration. Like iodine, from which it comes, the syrup is antiseptic, and does not lose its action from continued administration. In the clearing up of pneumonia, bronchitis, pleurisy and gout this syrup performs an excellent role, hastening the absorption of plastic material, and the same applies to the removal of indurations about boils, abscesses and carbuncles. This syrup as far excels the other iodine preparation as do the alkaloids, morphia and codeia excel the crude opium, and the profession is pretty well in accord now in preferring it to any form of iodine salts. In syphilis in the late forms it meets all the indications, and the patient soon learns to prefer it to the salty solutions of the antisyphilitic mixtures he has been forced to swallow. For a long time the iodides, preferably of sodium, because less irritating to the stomach,

chlorodyne, morphia or hyoscyamia. Dr. Graves, of Dublin, used to give 30 drops of tincture of opium with one-quarter grain of tartar emetic at late bedtime to promote sleep in his typhus patients with entire success, but many persons will not bear either the laudanum or the tartar emetic, nor will the American stomach tolerate often what the Irish stomach can. Of course we can always force our patients to sleep with a hypodermic of one-quarter to one-half a grain of morphia, but we are then surely entailing on him a most destructive habit, and the dose itself in the weakened heart is dangerous. In many of these cases a good dose of tincture of digitalis alone, 30 to 60 drops, will conduce to the most refreshing sleep with entire safety. Stramonium, Indian hemp and belladonna all produce cerebral delirium, and the bromides are too debilitating to trust to night after night, even if we could await their action. Sulfonal and paraldehyde may or may not answer our purpose in such cases. Dr. Murchison has suggested three grains of camphor with one grain of opium. The hyoscyamia hydrobromate often brings on the most refreshing sleep, but all these drugs, except digitalis, are narcotics and vascular excitants.

No one suffering from a paroxysm of asthma can sleep until the spasm is relaxed, and narcotics, if used at all here, must be in such doses as will leave the individual unfit for his business the next day. What better than to secure the hypnotic action by a drug which is free from all danger, and which, in whooping-cough and asthma will afford perfect repose by its anti-spasmodic power over the irritable bronchial tubes? We have known asthmatics who had used stramonium leaves, tobacco and salt-petre inhalations for years until their brains had become muddled, as it were, from the absorption of their fumes, and who were put to sleep an hour after taking two or three doses of the Syrup of Hydriodic Acid. It acts like a lullaby in children tormented by whooping-cough. It is free from all possible danger, is prompt in its effect and after once realizing the relief obtainable from it the asthmatic feels that he has induced a friendly anchor near by to which he can at all times cling with confidence. We were once called to see a gentleman on a blustering September night (21st) at 1 A. M. Before reaching the room we recognized the asthmatic breathing through the open door and remarked, "Well, here is trouble ahead." Knowing the difficulty of affording comfort to asthmatics when the wind is dead east, and the likelihood of attacks just then, we found our patient sitting propped up in bed, his eyes dilated, his shoulders raised and breathing almost in a whistle. We said: "My dear sir, you have a bad case of asthma, and this is the wind that brings it on." As soon as he could speak he replied, "Well, sir, if you know this soon what the trouble is maybe you can help me." We at once injected one-quarter grain of morphia into his shoulder, and in 20 minutes he was comfortable. He said he had never known such speedy relief, but that his wife had a syrup at home which she kept for just such attacks, but he had not thought to bring it with him, but that he had telegraphed her to come on and bring it at once. She came on, but only knew it had been prescribed by a French physician in New York and had always afforded relief. We at once telegraphed to the druggist the number of the prescription, and he replied by postal that it was:

℞ Syr. Hydriodic Acid, Gardner's, ℥ ij.

One teaspoonful every half hour until relieved.

This information we counted great gain, and such it has proven to be in many cases since of asthma and whooping-cough, and we now have been using the same syrup ever since without disappointment.

Its action is similar to the alterative effect both of iodine and mercury without the irritation, the iodism or the salivation so apt to follow either of these drugs. In the above cited case the morphia was injected to relax the existing bronchial spasm, knowing that sleep must follow as soon as the lungs were full to ærate the blood kept venous by the bronchial spasm; then, too, the morphia aided in the producing of sleep, but the main factor was the relief of spasm which simply permitted the exhausted patient to rest.

red. "Doctor" he said: "I spent all my hard earned money on physicians and physics, but I am growing worse; the headaches are so severe that I have attempted suicide." I treated him upon general principles and "kept the enemy at bay" until I adopted your Syrup of Hydriodic Acid, not as an adjunct or adjuvant, but as the principal means.

The doctor has lately reported the above patient as entirely well. (R. W. G.)

HYDRIODIC ACID AND ITS EFFECTS UPON CONSTITUTIONAL DISEASES AND ITS ADVANTAGES OVER THE IODIDES, ESPECIALLY THE SYRUP OF HYDRIODIC ACID (GARDNER).

By J. J. CALDWELL, M. D., F. S. S., London. Baltimore, Md.

As a prelude to the above entitled article, in justice to R. W. Gardner, I must in all honesty say that before his pharmaceutical and chemical efforts there was no preparation of hydriodic acid (iodide of hydrogen) that was either stable or reliable; that since my acquaintance with his introduction of this valuable remedy I have been both by clinical experience and theoretical deduction thoroughly impressed with its reliable application to the various phenomena, and of its entire reliability in nervous troubles, especially those of a spasmodic character, particularly in the kind arising from hereditary or constitutional taints. I am thoroughly aware that the profession owes it to Mr. Gardner that "Syrup of Hydriodic Acid" is available as a medicine, the first permanent form of hydriodic acid ever made being his syrup, which was introduced in 1878. All other syrups of hydriodic acid are imitations of his.

While hydriodic acid was known and suggested as a means of giving iodine many years before his syrup was introduced, and a solution was even introduced in the U. S. Pharm., they were all unavailable as a medicine on account of the proneness to decomposition, which made it impossible to find a sample fit to use.—J. J. Caldwell, M. D.

With hydrogen, iodine produces a gaseous acid, which we term hydriodic acid, a saturated liquor of which has a sp. gr. of 1.7, and boils at 260 degrees Fahrenheit. This is not used in medicine, but prepared as "the Syrup of Hydriodic Acid." It is a colorless, odorless and transparent fluid, with a sweetish acid taste, and is given in many affections, like scrofula, goitre, in enlarged glands wherever located, in chronic rheumatism, in asthma, whooping-cough, bronchorrhea and is useful in the fibrous form of phthisis pulmonalis.

The hydriodic acid was introduced into pharmacy by Dr. Andrew Buchanan, of Glasgow, as likely to take the place of iodine and as a less objectionable drug. He suggested the solution of five grains to the fluid dram, but about 1878, this gave place, because of the difficulties of its preparation, to more stable compounds, and the form now used is the Syrup of Hydriodic Acid as unalterable when properly made and should represent six and two-thirds grains of iodine to each fluid ounce of the syrup. It is more easily assimilated than the iodine itself, and not at all irritating to the stomach, as are all the other iodine preparations, which vary in their therapeutic action according to individual peculiarities.

If this syrup were useful in nothing else its power to relieve spasm of the bronchial tubes in asthma and in whooping-cough would render it invaluable to the neurologist, for sleep cannot be induced without danger, while the feeling of suffocation has possession of the patient during the paroxysms of these two diseases. When great restlessness exists it is questionable if the production of sleep at all hazards is worth the risk we run in using large doses of such strong hypnotics as opium, chloral,

many of the readers of this journal will only need to have their attention called to the preparation to cause them to use it in the future, as it is in every way preferable to the iodine salts.

Chronic Bronchitis.—Thomas Wildes, M. D., New York City, Jan. 24th, 1896, writes: "I have been using your syrup of Hydriodic Acid in my own case, and have derived much benefit from it, and have found frequent occasion since to prescribe the remedy in my practice, and for a variety of ailments.

"I took it for an old standing bronchitis, with frequent acute attacks, which had grown out of rheumatism, incurred in the army during the civil war. From this I had frequent attacks of acute bronchitis, which led up to several attacks of broncho-pneumonia, two attacks of pneumonia, phthisis, hæmorrhages, and emphysema, inducing dilation of the right half of the heart—for all of which I had passed seven years in the Tropics, and had largely recovered, but was still left with attacks of bronchitis. I was helped through a severe attack a few weeks ago by your syrup of Hydriodic Acid."

Crouposa Parenchymatosa.—M. F. Bozinch, M. D., Brooklyn, N. Y., June 6th, 1896, writes: "I have had a most satisfactory result with Gardner's syrup of Hydriodic Acid in a severe case of crouposa parenchymatosa."

Fibroid Tumor—Uterine.—M. K. Kreider, M. D., Goshen, Indiana, Oct. 17th, 1896, writes: "I used your syrup of Hydriodic Acid two years ago for a uterine fibroid; it arrested the growth of the tumor, and it has been gradually-growing smaller ever since. I used three or four pint bottles."

Acute Congestion of the Lungs.—J. E. Russell, M. D., Brooklyn, N. Y., Feb. 5, 1897, writes: "When we obtain stated results from a given article, it is but just and right that its merits should be readily acknowledged, so that others may profit thereby, if they will.

I have used your syrup of Hydriodic Acid and your syrups of the Single Hypophosphite Salts with the most gratifying results in the case of my brother-in-law, who has been suffering from acute congestion of the lungs, contracted at Hobert College, Geneva, New York.

He has so improved by his stay here and the treatment, that he feels he can return to his studies and finish the course.

I have used the Syrup of Hydriodic Acid before eating, and the syrup of Hypophosphite after eating.

Acute Inflammatory Rheumatism, Syphilis, Eczema, Nasal Catarrh, Acute Pneumonia, and Conjunctivitis Neonatorum.—John W. Murphy, M. D., Sullivan, Indiana, Jan. 25th, 1897, writes: "Your syrup of Hydriodic Acid is all right; as a substitute for iodide of potassium, it can't be beat. I have tried it in acute inflammatory rheumatism, and have had splendid results; also in syphilis, eczema, nasal catarrh, acute pneumonia, and conjunctivitis neonatorum. Of course I have used other treatment with it, but am well pleased with it."

Syphilis.—S. A. Binion, M. D., 41 South Washington Square, New York City, writes under date June 9, 1897, as follows: "My patient is progressing rapidly and the syphilitic eruption on his face has nearly disappeared; he suffers no more from distressing headache, and is cheerful; he is now upon the fourth bottle of your incomparable Syrup of Hydriodic Acid, and judging from the results already obtained, I do not hesitate to say that one or two bottles more will accomplish the desired effect."

The poor fellow is very thankful. What a contrast! When I first met him he was despondent, his face, especially the nose and around the eyes, was swollen and fiery

The potassium salt is especially irritating to many persons, the writer himself belonging to this class. Simply tasting of the finger dipped in a syrup containing one grain to the ounce will in a very few moments cause a very disagreeable scratching in the fauces, and for this reason I now very seldom make use of the potassium salt, as I have reason to think that there are many others like myself, to whom a course of potassium iodide would be little less than punishment.

What has been said of the potassium salt may also be said of the sodium salt, while the iodide of iron contains so little iodine that there is no reason for prescribing it, unless for the iron effects, for which latter it is very good.

The derangement of the stomach when large doses of iodide of potassium are given is also a very undesirable complication, and I have reason to believe that the percentage of these cases is indeed large, when large doses of the salt are given.

I have for several years been using the syrup of Hydriodic Acid to quite a large extent, and I find that the results obtained from its use are in every respect as favorable, and identical with those produced by iodide of potassium, and have found none with whom it disagreed. It is, however, to be noted that Hydriodic Acid is a very delicate chemical, hydrogen iodide, and one that requires more than ordinary skill to correctly manufacture; more indeed than the average drug clerk possesses. Prior to my study of medicine I served in that capacity, and I am a living witness to the fact to day. It is, therefore, but proper that I state in this connection that the syrup of the acid that I use solely, is Gardner's, an article that I have found unalterable, almost or entirely colorless, pleasant to the taste and effective. "All is not gold that glitters," and not all that is so labeled is Hydriodic Acid.

Knowing the indications for iodine internally, as all the profession does, it may seem superfluous to enter into a further discussion as to the diseases in which it will be found of service, but in order to induce some who may be pretty firmly rooted to the iodine salt treatment, I will briefly review some of its most prominent indications in which it has served me well.

Chronic Pleuritic Pains.—Here it is usually effective, given in doses of one teaspoonful every four hours. I have seen cases of this affection improve from almost the first day, and completely recover in several weeks. If there is any exudate present, it can be most confidently looked upon as the one indicated remedy.

Chronic Bronchitis.—This troublesome affection is quite common in our latitude, and one that is difficult to cure with the methods ordinarily employed. I was consulted some time ago by a gentleman, aged about fifty, who told me that he had suffered from this affection several years, which had withstood the onslaughts of several more able physicians than "yours truly" but which I entirely overcame by the syrup Hydriodic Acid, one teaspoonful in water before meals and at bed-time, with twice a week applications of fluid extract of hydrastis directly to the throat. This latter is a very valuable remedy in these inflamed and irritated pharyngeal membranes which we most always find where there is any chronic trouble in the throat.

In the various skin eruptions with which we are often confronted, when it would require a skilled dermatologist to correctly diagnose the case, syrup Hydriodic Acid will generally be found a curative agent. These eruptions generally attended with a greater or less amount of itching, are, we suppose, due to the lack of elimination of waste products from the system, and therefore this drug is indicated, and it will be prompt in its effects.

In the last stages of gonorrhea, when the discharge ceases for a time, and then again appears as a thin watery exudate, syrup Hydriodic Acid is most beneficial, given in doses of one teaspoonful every five hours.

During the past season I had several cases of hay fever that came to me for treatment for the first time, and I treated them with inhalations of menthol, and syrup Hydriodic Acid, two teaspoonfuls four times a day, and was informed that they had the easiest time of it that they had ever experienced.

A remedy that is so much used as iodine, should be given in its best and most agreeable form, which I believe thoroughly to be syrup of Hydriodic Acid, and no doubt

Unfortunately, about one year ago, I was prostrated with a severe attack of "typho-malarial fever;" I remained in "dreamland" I think about five weeks, when pleuro-pneumonia became a sudden complication. After the lapse of seven or eight weeks longer, I began to expectorate freely, in fact, too freely for my own comfort. Nearly all the physicians who visited me, (twenty in number), regarded the case hopeless.

My emaciation was extensive, weight having fallen from 150 to 90 pounds.

I did not then, neither do I now, regard it as being a case of phthisis, but felt very certain that the material I expectorated, came from an "hepatic abscess."

I am indeed profoundly grateful to my medical brethren for their kind and untiring efforts to save my life, and restore me to health. They seemed to be leaving no stone unturned. In addition to good, substantial nourishment, they gave me hypophosphites, cod liver oil, tonics and alteratives in almost every form without any perceptible change. I then requested Dr. W. S. Mecklem, who was in regular attendance, to get me a bottle of "Gardner's Syrup of Hydriodic Acid," that I might give it a fair, impartial trial.

I began the use of it by taking teaspoonful doses, four times daily, ten to twenty minutes before meals, and at bed-time, diluted with two or three tablespoonfuls of water. After using it five or six days, my appetite grew very strong, and cough and expectoration were perceptibly diminished; and at the expiration of twenty days, expectoration had entirely ceased. This great change, I am confident, was due to the active tonic and alterative effects of the acid. The consolidation of my right lung, which had been persistent for several weeks, began to perform its former function, and hepatization soon became a thing of the past. In about seven weeks after I began to use the acid, my weight increased from 90 pounds to 140 pounds; and to-day I am restored to my normal weight, feeling little or no inconvenience from my long serious illness.

Both before and after my sickness, I prescribed syrup of Hydriodic Acid in a number of cases, simulating larygneal and pulmonary phthisis, and in a number of cases, improvement became quite marked, in the ordinary length of time, when a genuine, pure article was used. I have yet to observe the first bad effects from its long continued use. A strictly pure preparation is both pleasing to the taste and stomach. I sincerely hope my medical brethren, all over this broad land, may give this remedy a fair trial and report results, whether they be good or bad.

Sept. 21st, 1891.

SYRUP OF HYDRIODIC ACID AS PREFERABLE TO OTHER FORMS OF IODINE.

By J. D. ALBRIGHT, M. D., Akron, Pa.

From *Medical Summary*, December, 1896.

The irritating effect of iodide of potassium upon the stomach and the difficulty of administering it in the large doses that are often necessary to bring the system rapidly under its influence, are well known to all, and formulæ with which to combine it, so as to render it pleasant, or even bearable, have been frequently offered.

When iodine is administered, two desirable points appear to view, and they may be said to be:

1. Rapidity and thoroughness of assimilation.
2. Administering it in such a form that it will prove unirritating to the patient.

We have in iodine one of the best alteratives of the materia medica, and at the same time one that is very apt to disagree with our patients, especially when the salts thereof are administered, as is now so much the custom.

we give them their iodine in an agreeable, acceptable form. It may be used without intermission. It produces no depression, no indigestion, no irritation; and invariably where I have found idiosyncrasies against the use of iodide of potassium, where catarrhal and other disagreeable disturbances of the mucous membrane were aroused, the Gardner syrup of Hydriodic Acid has uniformly been well tolerated.

Since the introduction to the medical profession of the syrup of Hydriodic Acid by Mr. Gardner, fifteen years ago, I have constantly used the remedy, and have never had occasion to regret it. I should as soon think of permitting a druggist to substitute tincture of marigold for the green tinctur of digitalis, when I desire to reduce the rapidity of the heart's action, with the question of life and death involved, as to allow any druggist to substitute any other syrup of Hydriodic Acid in place of that of R. W. Gardner. The medical profession is under special obligations to Mr. Gardner for his careful, skillful, scientific work as a chemist in this direction, and it should endorse him by its support, knowing that good results can be expected to follow the use of his preparation.

CONGESTION OF THE MUCOUS SURFACES OF THE AIR PASSAGES.

J. STINSON HARRISON, M. D., WASHINGTON, D. C.

(Extract from a letter received November 8, 1895.)

"I am still using your syrup of Hydriodic Acid with highly gratifying results. My last case was that of a fat, chubby little boy, who could scarcely breathe when called to see him; he was breathing like an asthmatic.

I diagnosed congestion of the mucous surfaces of the air passages. The child also was suffering from an eruption over the head, face and hands.

I at once gave the Hydriodic Acid in small teaspoonful doses, every three hours. In twelve hours he was greatly improved; his breathing was relieved; the rattling in the throat ceased and he slept comfortably.

For all such affections I regard Hydriodic Acid as almost, if not quite a specific. The little patient, after three days' treatment, is almost well, thanks to your syrup of Hydriodic Acid."

A COMPLICATED CASE OF PLEURO-PNEUMONIA, FOLLOWING TYPHO-MALARIAL FEVER, COMPLICATED WITH HEPATIC ABSCESS.

BY R. S. BOLLES, M. D., LUCAS, OHIO.

(His own case.)

I have been in active practice for nearly twenty-three years. During this time I have had numerous opportunities for testing the virtues and potency of nearly all medicinal agents, both old and new. Specifics are nice things to talk about, but very difficult to obtain. I am quite sure, however, that syrup of Hydriodic Acid is a valuable therapeutic remedy, notwithstanding what "Stille and Maisch" say to the contrary I have employed it chiefly in affections of the air passages, and especially in the subacute and chronic stages. I do hope that I will not be considered an enthusiast when I say, that in a great number of cases, the happiest results have followed its administration.

were far beyond our expectations. The patient has fully recovered her usual health and strength, and has had no recurrence of the pains or other bad symptoms which she formerly had, and has remained so for a period of fully five years.

The result of treatment is not expected to remove the tumors, but to shrink them up and thus render them inert.

Case No. Two. Mrs. F., over forty years of age, had been troubled with extreme flowing, which greatly emaciated her. At last was taken to her bed with severe pains, and quite severe floodings. An examination was made, which revealed multiple sub-serous fibroid tumors, two of which were as large as an orange. Tamponed her, relieved the pain by opiates, and put her on syrup of Hydriodic Acid. The result of treatment was fully as beneficial as in case No. one.

Case No. Three. Mrs. T., aged about forty-two years. The condition of this case was similar to No. two. There were three or four tumors in this case, two of them anteriorly, which were large, pressed forcibly upon the bladder, produced pain in the bladder and some cystitis.

This patient was also examined by Dr. Bunker in consultation with me, and the results in cases Nos. one and three, were also verified by him. Under the treatment of syrup of Hydriodic Acid, the woman has been brought to a perfectly comfortable condition. She had but one relapse, about two years after the first treatment, due to extra work and fatigue consequent upon removing into a newly purchased house.

Previous to treatment she was unable to go out or exercise at all for a year or more, and after three weeks' treatment was able to go about as she pleased.

Case No. Four. Mrs. Y. came to my office, very anæmic, had been under the care of physicians about two years; more than half of the time she had been flooding more or less. At last an operation was advised and time fixed for it. Her mother requested her to call and see me for my opinion before having it done. I advised her to wait and see the result of treatment before submitting to the operation.

Examination revealed the uterus firmly fixed by sub-serous fibroid multiple tumors; also, protruding from the os, was a sub-mucous fibroid with quite large base; painted the same with tincture iodine compound, and placed her upon syrup of Hydriodic Acid, with opiates to relieve pain. When she next called, in about two weeks' time, she stated that she had ceased flooding and felt better than she had for two years. Her next two monthly periods were five weeks apart, with but three days' flowing, as she used to be before she was troubled with the tumors. She is still under treatment and tumors diminishing in size, with the sub-mucous one becoming more protruding and pedunculated.

I had three other cases which were progressing finely, but being office patients, and non-residents of the city, they have passed from under my notice. I could not, therefore, give as good and as satisfactory a statement of the results, as in the preceding four, who are members of my regular families.

KIDNEY PAIN.

By WM. C. WILE, A. M., M. D., LL. D., Danbury, Conn.

(Reprinted from *New England Medical Monthly*, July, 1894.)

In the treatment of every case of pyelitis and renal colic, the practitioner has a great deal of difficulty in controlling the pain in the kidneys. The editor of the *Monthly* has been a sufferer for years from a gouty condition, which manifested itself about four times a year in acute attacks of renal colic. In the intervals between these attacks the pain in the kidney was not so severe as during an acute paroxysm of the disease. Still it was constant, aggravating, and often sleep-destroying, especially fol-

The great value of iodine as an alterative and its adaptability to a wide range of diseases, has stimulated pharmaceutical talent and brought into use a preparation that possesses all the virtures of the old preparations without any of their objectionable qualities—we refer to the "syrup of Hydriodic Acid," manufactured by Mr. R. W. Gardner, of New York. The writer has been using this preparation for several years in all those pathological conditions where iodine is indicated with uniformly satisfactory results, more especially in asthma and goitre of a hypertrophic character. The result of its use in the treatment of hay asthma will appear in the following clinical cases:

CASE 1. Mr. G., aged forty-five years, called at my office June 5, 1893, complaining of headache, nasal irritation, with profuse discharge from nasal and air passages, and asthmatic accompaniments. Had suffered from same trouble about same time of the year for several years. Had never obtained relief before the advent of heavy frosts. We sprayed nasal passages with cocaine hydrochlorate and prescribed two teaspoonfuls of "syrup of Hydriodic Acid." (Gardner) three times a day before each meal. Improvement immediately followed, and in two weeks patient was entirely cured. Advised the use of Hydriodic Acid two weeks preceding attack. The patient has up to this time, which is more than a year, had no return of the disease.

CASE 2. Mr. M., presented himself at office August 2, 1893, with a clearly established case of hay fever; had suffered for years during summer months, always at the same season of the year; had never received more than temporary relief from treatment. We prescribed cocaine insufflations and a dessertspoonful of syrup of Hydriodic Acid three times a day, before meals. Improvement promptly resulted, as in first case, and in ten days was entirely free from trouble. Advised use of same remedy two weeks preceeding next looked-for attack. The patient has been under our observation for over a year, with no reappearance of the disease.

CASE 3. Mrs. S. presented herself August 15, 1893, with marked symptoms of hay fever. Having discovered malarial features, we prescribed quinine, which relieved her very much, but did not entirely end the trouble. We ordered cocaine. It has promptly yielded under the sprays and the syrup of Hydriodic Acid in teaspoonful doses three times a day. In seven days patient was restored to her usual health, and up to this time, which is over a year, has had no return of the disease. In this case we advised resumption of treatment before expected reappearance of disease, as in former cases. In all the use we have made of this preparation we have never noticed iodism or any other unpleasant effects. While its pleasant taste, with most patients, is an important advantage it possesses over all other preparations of similar therapeutic value.

SEVEN CASES OF FIBROID TUMOR, SUCCESSFULLY TREATED BY SYRUP OF HYDRIODIC ACID.

BY JAMES J. TERHUNE, M. D., BROOKLYN, N. Y.

(Reprinted from the *New England Medical Monthly*, December, 1894.)

Mrs. V. B. had been complaining for a long time, a year or more, with pelvic pain, backache, but persistently refused examination and treatment. At last was taken down with severe pains and fever to such an extent as to necessitate medical attention. The first examination was made by myself and E. S. Bunker, M. D., late Professor of Obstetrics, Long Island College Hospital, in consultation; diagnosis was plain, subserous fibroid tumor, (multiple.)

In speaking of the treatment, the thought occurred to me that Hydriodic Acid would be serviceable. We therefore prescribed Gardner's syrup of Hydriodic Acid, a teaspoonful three times a day, and were very much gratified with the results, which

AUTUMNAL CATARRH.

By S. C. MARTIN, M. D.,

Prof. Dermatology and Hygiene, Barnes Medical College, St. Louis, Mo.

(Reprinted from the *St. Louis Medical Era*, September, 1894.)

This disease is not, as its usual designation implies, strictly an autumnal affection. It occurs oftener in the fall of the year than at other seasons, but may be encountered in any month of the year. Nor is it produced, as formerly supposed exclusively by the pollen of certain grasses, although this is probably among the stimuli that may excite an attack where the predisposing causes are in full operation. The fact that the disease is more common in the larger cities, where the air is laden with a variety of impurities from innumerable sources, and men, who are exposed to these agencies more than women, are the most frequent victims, weakens very much the theory of pollen as a principal factor in its etiology. A neurasthenic constitution, supported by imprudent habits, often furnishes the soil for its development. It is essentially an irritation or inflammation of the mucosa of the eyes, nasal and air passages, often attended by profuse secretion from these parts, and asthmatic manifestations. It is easily distinguished from other forms of asthma by its anatomical and pathological characteristics, rarely, if ever, appearing at night, while spasmodic asthma as rarely appears in the day time. Heredity probably has its bearing on this disease, as the writer has noticed some connection of this affection with a tubercular diathesis, having discovered frequent deaths from tuberculosis in the families of those whom he has treated for hay fever. The neurotic influence seems to be an indispensable factor, otherwise the disease would not be developed on about the same day of the same month for several years successively, as often happens, and be produced by even the sight of artificial flowers, as is well authenticated by various observers. Malarial influences undoubtedly often have much to do with the development of hay fever, as in several instances it yielded in the writer's observation to large and repeated doses of quinine. This disease is marked by its sudden onset and excessive sensitiveness of the nasal passages to any unusual irritant. Unless rigid treatment is enforced or the patient transferred to other environments, the disease may continue for several weeks, and after subsiding leave him in a debilitated condition from which he may not recover for months. The same difficulty that stands in the way of a thorough understanding of the underlaying causes of hay fever also embarrasses its treatment. As a general thing a change of locality and surroundings of the patient is indicated. If he lives in the city he should go to the country, and if he lives in the country, should be sent to some place of improved sanitary environment. Any inherited or acquired infirmities should be eliminated. The nervous system is generally shattered and should be invigorated. To this end we may have recourse to strychnine, arsenic, and phosphorus, in some suitable form. Sometimes a trip, when it is possible, on the sea or lakes will be all that is required. If the secretions are very profuse, atropine will have a good effect. If the nasal passages are very irritable or sensitive, some authors advise superficial cauterization with chromic or carbolic acid. For temporary relief the writer has never found anything equal to hydrochlorate of cocaine by spray or insufflation, of the strength of three or four per cent.—the amount during twenty-four hours should not exceed one-third of a grain, and should never be entrusted to the patient's judgment, but used only under the observation of the physician. By carrying out this rule the risk of accidents and habits that might prove disastrous to the patient are avoided. For a long time iodine, in combination with the alkaline bases, has been used with more or less favorable results in all forms of asthma, especially of a reflex character. The objection to the use of the old preparations is due to their irritating effects on the alimentary canal. as well as to their acrid, disagreeable taste. In hay asthma, to be followed by satisfactory results, large doses are sometimes necessary, and it is not often they are tolerated,

PYELITIS AND CYSTITIS.

By W. B. FLETCHER, M. D., Indianapolis, Ind.

(Reprinted from the *Charlotte Medical Journal*, N. C., November, 1894.

"T. A. A., a clerk in the United States Court came to me for examination four months ago. He is forty-seven years old, five feet five inches high, weight eighty-seven pounds. He came to me because of certain nervous symptoms which had alarmed him; although not in good health for ten years, and under the treatment of various physicians most of that time.

He had not been confined to his bed, but was able to "drag round" at his work. He said, "I do not expect to get well but my head is aching so constantly and I have such weakness in my legs that it frightens me." Upon inspection of the naked body, I found the skin roughened in patches, particularly over the chest, in spots from the size of a dime to that of your hand.

The roughness was like grease covered with fine bread crumbs, which could be removed by friction with a dry cloth. The abdomen was rather prominent, there was tenderness over the ascending and decending colon and some pain in pressure over the loins.

Ophthalmic examination showed extremely contracted pupil, which under atropia dilated fully, when the optic disk was found congested, the arteries varicose. Ophthalmoscopic examination particularly called my attention to the kidneys, as being the probable cause of his head and general nervous symptoms, and upon making chemical and microscopical investigation of the urine I found that it was loaded with pus, with epithelium from the pelvis of the kidneys, a few granular casts and a large quantity of bladder epithelium. I found on inquiring that he had to urinate about every three hours day and night, and that the urine had looked light and yellowish for several years, but the deposit was greater of late. I prescribed hot sponge baths followed by a cold wipe down and dry frictions every night. Washing the bladder with a saturated solution of boric acid every third morning, and Gardner's syrup of Hydriodic Acid before meals. The results were in one week a gain of two pounds in weight, a normal pupil, a clear skin, a gradual diminishing headache, a better feeling in loin and legs.

All these improvements continuing until at the end of three months he weighed 112 pounds and says he feels well, something never experienced since the close of the war. I regard the cure of this case due to the Hydriodic Acid, as its tonic alterative properties upon the sympathetic system have been so frequently demonstrated in my own practice, whenever the glandular organs were at fault or defective nutrition caused degeneration of the vaso-motor centers as in exophthalmic goitre, chronic tabes, mysentericus, etc., etc.

I prefer Gardner's preparations to any I have used as being less liable to produce irritation of the stomach or cause headache as a great many other preparations do."

"Hydriodic Acid syrup is a very pleasant and certainly an efficient way of giving iodine in chronic broncho-plumonary affections. It should not be used if discolored; one of the best preparations is that made by R. W. Gardner, of New York, of unchangeable syrup of Hydriodic Acid. It renders excellent service in asthma, chronic induration of the lungs after pneumonia, pleuritic exudations, and in some skin diseases." "*Materia Medica, Pharmacology and Therapeutics*," Shoemaker, vol. 2, page 706, (1891).

pleasantly. Every practitioner has had similar experiences, and has gone through the gamut of tonics only to turn in disgust from the shelf that holds them, in despair of finding something new.

It is in the hope of supplying this need that I wish to call attention to some of my own work in the line of nervous diseases, in which I am interested.

About two years ago a young lady came from central Maine to me suffering with an obscure disease of the spinal cord, which had prostrated her nervous system and made of a strong girl an apparently hopeless invalid. For months she had been unable to help herself from exhaustion, all functions were disturbed, and melancholia threatened.

After a few days' rest, I began the use of central galvanism systematically, and continued it for ten days. At the end of this time, in place of improvement, there was positive loss. She was weaker than at first, and it became evident that something else was called for.

She was then placed in an isolated, quiet room, with a trained nurse, and fed with my favorite mixture of equal parts of cream and Valentine's beef juice a teaspoonful every half hour. At the same time I commenced the administration of iodine, using by preference Gardner's syrup of Hydriodic Acid in ten drop doses hourly. I find that this preparation is by far the best form of iodine for rapid dosing, as it is pleasant to taste and rarely, if ever, produces coryza.

In three days the girl showed improvement, and in three more was so much better that seclusion was abandoned, and the dietary enlarged to take in some solid food. The iodine was continued in drachm doses of the same syrup four times daily for another week, when Miss B. was on the high road to cure, and had commenced to taste metal plainly.

The iodine was then exchanged for Hypophosphites, a half ounce at bed time. Contrary to usual belief, I find this the most effective way of using this drug. There is a more rapid absorption going on during sleep than in waking hours, and the nervous system is more susceptible to influences of all kinds.

At the end of three weeks of the Hypophosphites, accompanied by a diet list of usual proportions, Miss B. was sufficiently well to be permitted to return home, and has since remained in fair health.

The preparation last used was also from the Gardner laboratory, and I am convinced that it is essential to have these compounds pure, a condition that does not exist in every formula on the market.

I have had a bottle of each of these remedies of this make on a shelf in my medicine closet for six months without undergoing any change, either in color, taste or therapeutical properties, and can recommend them as reliable.

All nervous diseases are either accompanied by or are the result of blood change, and will be most successfully treated by such means as will tend to restore the blood to a normal condition, and in my experience these have proven to be alteratives."

Purpura, Sclerosis of Liver.—Dr. J. K. Cantrell, Alton, Mo., March 4, 1893, writes: "I have just completed a cure of a case of purpura, a child two and one-half years old, and I must say that out of twenty years' practice, and I have treated some sixteen cases of purpura, some of the hemorrhagic form, I never treated one so successfully as this last one, and my success is due to syrup of Hydriodic Acid (Gardner's). I am also treating a case of sclerosis of the liver—patient improving fast; had hematemesis until he was almost dead; has not had a hemorrhage since he commenced the remedy."

A CASE OF REFLEX ASTHMA FROM NASAL STENOSIS.

By CHARLES H KNIGHT, M. D., New York.

(Reprinted from the *Journal of the Respiratory Organs*, March, 1890).

Cases of reflex asthma, due to intra-nasal disease, have ceased to be clinical curiosities. Yet brief notes of the following case may be of interest, the asthmatic symptoms having been so persistent, the nasal lesion being so marked, and the relation of cause and effect being apparently so clear.

The patient was an unmarried woman, a brunette, twenty-three years of age, and of a decidedly nervous temperament. She was a mouth breather, owing to a large hypertrophy of the right inferior turbinated body and to the presence in the left nares of a septal ridge, extending from the floor of the nose, just within the nostril, upwards and backwards to the left middle turbinated body. Thus the left inferior meatus was nearly, and the middle meatus completely, occluded.

She came to the throat clinic of the Manhattan Eye and Ear Hospital on October 19, 1889, in the midst of a severe attack of asthma. She stated that she had been subject to the disease "as long as she could remember." She was afraid to leave the house in damp weather, could not enter a room that was being swept, and was sure to have an attack after inspiring tobacco smoke. The longest period of immunity she had known was four months, a year ago, (November to March), when she observed the strictest precautions as regards exposure to known exciting causes, and at the same time made free use of cocaine as a nasal spray.

Her general health was much impaired, she lost flesh, and became unfitted for any occupation whatever.

She was given a nasal wash of Dobell's solution, and was directed to take a teaspoonful of syrup of Acid Hydriodic (Gardner's), every four hours.

Ten days later I removed the ridge from the septum with the nasal saw, making a free passage for air through the left nostril. On her next visit she said she felt much better, and her whole appearance indicated decided improvement. Her breathing, which had been constantly stridulous and at times very labored, was quiet and natural. With the exception of a very mild and brief attack of asthma, accompanying an acute rhinitis with consequent nasal obstruction, which occurred about a month later, this patient has had no asthmatic symptoms since the operation. She has been able to take employment, goes out in all kinds of weather, takes no more than ordinary care of herself, and considers herself cured.

ALTERATIVES IN NERVOUS DISEASES.

By the late WILLIAM F HUTCHINSON, M. D., Providence, R. I.

(Reprinted from the *New England Medical Monthly*, August, 1890.)

Each year of my special practice in diseases of the nervous system, I grow more and more convinced that too much stress is placed upon the use of tonics and stimulants therein, and too little reliance upon drugs intended to change blood. There is a distinct limit to the former for they rapidly lose effect if continued any great length of time, and their number although large, is not sufficient to keep up a non-ending relay. It is curious how soon toleration of any one of this class of remedies is established up to immense doses, and how long it is before the system recovers so that small ones will have the primary effect I have a patient upon whom a less dose of compound elixir of cinchona than four ounces is useless, and who only feels that dose

Definite Strength and Reliability.—F. F. Dickman, M. D., Fort Worth, Kansas, *Medical Catalogue*, October, 1891, says: "Gardner's syrup of Hydriodic Acid. Too much credit cannot be given Mr. Gardner in keeping this excellent preparation up to a standard of excellence and purity found in none of the numerous imitations that are found in the shops. In fact we have found that almost invariably when failure of beneficial results are reported, that some other manufacturer's product has been dispensed.

It is unfair to blame the drug or to decry it as worthless unless a good article has been used. We know Gardner's syrup to be an excellent remedy, and when recommending the preparation we mean the original Gardner's syrup and not an imitation.

Rheumatism, Bronchitis.—W. T. Peyton, M. D., Louisville, Ky., March 1, 1890, writes: "I cannot find words enough to praise your syrup Hydriodic Acid. It answers every indication in acute and chronic rheumatism, bronchitis, and all the morbid conditions mentioned in your pamphlet."

Eczema.—F. E. Daniel, M. D., Editor *Daniel's Medical Journal*, March, 1890, writes: "Gardner's syrup of Hydriodic Acid has a wide therapeutic range, but its most brilliant powers are brought out in eczema, that protean disease which so baffles the doctor, and in scrofula."

Jas. Lewis Howe, M. D., Dean Hospital College of Medicine, Louisville, Ky., June 20, 1891, writes: "Some time ago you sent to the Hospital College of Medicine an assortment of the preparations manufactered by you, with the request, that we use them in the clinics of that institution.

Permit me to say, so far as I can say in every instance they have proven of inestimable value, and I hope that you may meet with the success that you so richly deserve."

Enlarged Tonsils.—Extract from an article on "Treatment of Enlarged Tonsils by Injections of Churchill's Tincture of Iodine," W. D. Blatchely, M. D., Fort Scott, Kansas. From the *Kansas Medical Catalogue*, December, 1890. "At this visit on the 12th, I injected the tonsils in both cases with Churchill's tincture of iodine. The weather becoming bad they did not return to the office any more that winter. The father reported both children improved but not well.

April 23, 1890, both the last two cases were brought to me again for treatment, and the injections were resumed at intervals of two or three days. After two weeks of treatment the girl was well, but the boy was more difficult to influence, and I put him on the use of Hydriodic Acid about the first of May, in addition to the local treatment, which was continued at intervals varying from two to five days, until May 30. I have not seen his throat since that date, but the parents report him well."

Asthma.—Dr. C. F. Huddleston, Troy, N. Y., writes: "In an aggravated form of asthma, accompanied with chronic bronchial inflammation and some emphysema, in which I am using it, I find it to be attended with very pleasing results. Not less satisfactory results are obtained from its use in syphilitic trouble, where it is necessary that the patient have a fair amount of iodine.

In the use of potassium iodide the stomach is very apt in a short time to become irritable, and it is then found that the syrup of Hydriodic Acid acts beautifully, and with all the results to be expected from the former remedy

November, 1891, the doctor writes: This patient continued to improve, the loss of weight at once began to decrease, and in the course of three or four months the patient was as well as ever."

I have treated quite a number of cases of acute inflammatory rheumatism with the syrup Hydriodic Acid, and with great good results, and good results so soon, as to surprise both myself and the patients. In one case of what I believed to be acute inflammatory rheumatism I failed completely, but after seeing the patient for many months, after partial recovery, and watching him carefully, I think the disease was simply 'obesity,' with something of a gouty nature about it."

Chronic Trachial Trouble, Cystitis, Asthma, Croup.—Dr. J. M. Blakesby, Germantown, Ky., Feb. 28, 1890, writes: "I have been using your syrup of Hydriodic Acid, in my own case, for a trachial affection of chronic nature, for two months, am on my last bottle, and so well in that respect I deem it unnecessary to use more, at least at present. I have used it in a case of chronic cystitis, in which much relief was experienced from pain and other symptoms; I consider it an excellent remedy in this disease.

If seems to be, in my hands, all that you claim for it in the treatment of asthma and croup."

Typhoid Fever.—Dr. B. F. Gardner, Atlanta, Ill., March 28 189?, writes: I have been using your preparations for some time, and could not practice without them. I am particularly attracted to syrup Hydriodic Acid. I use it in typhoid fever, or whenever I find a dry, red tongue, and always get good results. In rheumatism in children it is a specific if there is such a thing.

Chronic Asthma, Rheumatism, Syphilis, Fibroid Tumor.—J. Weichselbaum, M. D., Savannah, Georgia, Oct. 17, 1889, writes: I have been very much pleased with syrup of Hydriodic Acid, and have been prescribing it largely. In chronic asthma and chronic rheumatism I have received no benefit from it, but in acute cases it worked charmingly. I prescribe it in all glandular troubles, and meet with success. In chronic bronchitis in two marked cases it worked nicely; the cases were in patients over seventy years of age. I prescribe it in all cases where I want to use iodine internally.

I have a case of fibroid tumor under its use, and another with syphilitic rheumatism, in which I used it in combination with hydrarg. bin-iodide with good results.

Exophthalmic Goitre, Rheumatic Neuritis.—Dr. I. N. Love, St. Louis, Mo., in article on "Hot Springs," in the *Medical Mirror*, May, 1891, writes: "The eminent Dr. J. M. Kellar, known all over America, reported to me a serious case of exophthalmic goitre, treated successfully by Gardner's syrup of Hydriodic Acid.

As remarked by Dr. Kellar, 'One blue bird doesn't make a summer, but summer surely is near when blue birds appear.'

Undoubtedly the absorption of plastic matter and the reduction of an abnormal circulation is aided by the internal administration of iodine, and this ideal medicament cannot be better given, than through the medium of Gardner's syrup of Hydriodic Acid.

The writer possesses, as do many others, a marked idiosyncrasy against the iodide of potassium, and when suffering recently from a rheumatic neuritis affecting the brachial plexus superinduced by a severe cold following la grippe, he was forced to relinquish the potassium iodide altogether.

Gardner's syrup of Hydriodic Acid acted admirably and it should commend itself to the practitioners at Hot Springs."

Chorea.—I. N. Love, M. D., St. Louis, in the *Medical Mirror*, Feb., 1891, under the head of "Chat Concerning Children," the editor refers to the treatment of chorea, and says: "As a special builder up of the nerves, the compound syrup of the Hypophosphites is indicated.

Gardner's syrup of Hydriodic Acid has in my hands proved of great value; teaspoonful doses three times a day. This, together with an available form of iron, the old-fashioned muriated tincture of iron in ten drop doses three times a day, well diluted, to the average child is of great service."

I am treating acute and chronic rheumatic conditions with the preparation with marked benefits. Also in secondary and the more advanced stages of syphilis, with results highly satisfactory. I am much pleased with the preparation as made by you, and am prescribing it constantly.

My druggist has been making a syrup of Hydriodic Acid and filling my prescriptions with it, but my patients complain that it does not act like the medicine they have been taking, and that the "last" was entirely different from your article."

Under the date of July 6, 1888, Dr. Daniel writes as follows: "I have used your preparation of the syrup of Hydriodic Acid constantly and exclusively since my letter to you, in bronchial and catarrhal asthma, and consecutive conditions of syphilis, rheumatism, and in glandular enlargements (scrofulous). My success in these cases has almost been phenomenal, and I am more than gratified to be able to add my endorsement of a preparation which has given me such unvarying results.'

Chronic Rheumatism.—S. T. Yount, M. D., Lafayette, Ind., *Medical Waif*, June, 1890, writes: "*Syrup Hydriodic Acid* has been used with the best of results in chronic rheumatism. Two cases, one of one year and another of six year's standing, were cured in a month's time by the use of this remedy. The case of six year's standing had resisted all remedies, and the patient was bedridden about half the time.

Gardner's syrup of Hydriodic Acid was used in tablespoonful doses every four hours, and a perfect recovery ensued. It produced no gastric irritation whatever."

Bronchitis, Scrofula, Catarrh, Etc.—L. S. Nicholson, M. D., Washington, D. C., Nov. 22d, 1890, writes: "The best success has attended the use in my practice of your syrup of Hydriodic Acid in bronchial disorders, scrofulous troubles, uterine catarrh, enlarged glands and chronic rheumatism. In these troubles I consider it almost a specific.

Also, happy results have been obtained from the use of Gardner's syrup of Hypophosphites of Lime, Soda, Iron and Potassium, in many of those cases of racking nervous coughs, indicative of approaching bronchial and pulmonary troubles.

So that I feel it my duty to recommend these hypophosphite syrups in every case of consumption, and especially in its incipient stage."

Potts' Disease, Chronic Bronchitis.—Dr. Franklin Jno. Kaufman, Syracuse, N. Y., writes: "I wish to express my high appreciation of your syrup of Hydriodic Acid. I have used it with excellent success in a very aggravated case of chronic bronchitis, after everything else failed. I consider it a most wonderful remedy. In the treatment of strumous glands, nothing equals it. I would also say that I have had remarkable success in several cases of Potts' disease of the spine, by the use of your syrup Hypophosphite of Lime in alternation with your syrup Hydriodic Acid."

Syphilis.—In noticing an article by Dr. Judkins in *N. Y. Medical Record*, the editor of the *Medical World* writes: "We have been prescribing this in the form of Gardner's syrup of Hydriodic Acid for the past three years, with much benefit in idiopathic asthma, and also in syphilis; in the latter diseases it acts satisfactorily when iodide potassium seems to fail."—*Medical World*, May 1885, p. 163.

Asthma, Obscure Abscess.—Dr. J. C. Wilson, Morley, N. Y., under date June 26, 1885, writes: "I have used your syrup Hydriodic Acid now for some months, and have been agreeably surprised at its success in treatment of asthmatic cases. I have used it in one bad case of asthma with very flattering results. I am prescribing it now in a case of obscure abscess. The patient has been seen by one eminent diagnostician, and he as well as other physicians has been unable to locate the abscess, but from facts in the case, there is no doubt of the abscess, and that it is discharging through the lungs.

It was observed that under tonic treatment the patient was losing one pound in weight per day, until put upon syrup Hydriodic Acid. This was given in dessertspoonful doses, with the result of decreasing the loss of weight steadily."

could only be voided with great difficulty. About noon your pamphlet was handed me. After giving it a careful reading, and not having previously heard of your preparation, I concluded at once to try it. My druggist sent me only eight ounces, as there was only one pound in the whole city. I took 3 iij every two hours all night and next day up to six P. M.

After I had taken 3 vj I felt a desire to urinate, and not having been able to move an inch twenty-four hours before, I now arose without difficulty and was very much relieved of pain.

I went again to bed and took the medicine as before. Next day (Sunday,) three P. M. I was called to see a patient. When I returned I did not again take to my bed, but sat down in my office writing editorial matter, as I am the chief editor of a newspaper. As I had but little of the syrup left, I reduced the dose to 3 ij every four hours. I took the last on Monday night and felt considerably improved. My druggist ordered more of the Acid, as I was fearful of a relapse. I was obliged to wait eight days for it. All the week I attended to my extensive practice, and wrote, every night, a few columns of editorial matter.

I hardly know how these remakable results became so quickly known, but during the next week your syrup of Hydriodic Acid could be bought by the dozen in this city.

Other physicians used it at once. I myself prescribed it, since, very often for rheumatism, asthma, and hay fever, etc., with great satisfaction in every single case of that kind.

It seemed to be my duty to send you this statement of facts to render you my hearty thanks, and to recommend it to the medical profession for further trial.

June 30, 1888, he writes: In addition to my last letter I wish to state I have since prescribed your syrup Acid Hydriodic in many cases of rheumatism, asthma, hay fever, bronchitis, and laryngitis, with excellent results. It has given me more satisfaction in these cases than any remedy I have used during my thirty years of practice.

I know I was the very first physician to use it in this city, as I could get only eight ounces of it when I first prescribed it, while it is now obtainable at every respectable drug store. The cure of lumbago (in my own case,) in three days seemed to awaken a great interest in it among our physicians. One year after my first attack of lumbago I had another spell of it, which was promptly relieved by four ounces of your syrup. There is not a day that I do not prescribe it with general satisfaction to myself and patients.

I would caution physicians to see that decomposition has not occurred, generally caused by the careless manner druggists handle it. If decomposed, I have it exchanged at once. I shall certainly continue the further use of it, and recommend it to every brother practitioner, with the assurance that he will not be disappointed in giving your syrup of Hydriodic Acid a fair and impartial trial wherever indicated.

Asthma.—J. W. Daniel, M. D., Houston, Texas, Jan. 16, 1886, writes: "I am just now in receipt of the fourth edition of your pamphlet, calling attention of physicians to your preparations, more especially the syrup Hydriodic Acid. Some three years since, my attention was directed to this preparation (by an article, I think, published in the *New York Medical Record*) in the treatment of asthma. I immediately ordered through the druggist, several pounds of your preparation. My mother was a chronic asthmatic; one pound of the preparation (syrup Hydriodic Acid) relieved her entirely; only at long intervals now is there any indication of return of the disease, a few doses of the syrup relieving her at once.

Mrs. P., for some years a sufferer during the autumn and winter, has entirely recovered after the use of the remedy for a short time. There has been no return of the disease with her.

Mrs. G., and elderly lady and for many years a great sufferer from asthma, has been relieved almost entirely. In this case there may be cardiac complications; still the relief has been positive for the time being; sufficient time has not elapsed to determine the permanency of it.

under treatment in hospital and elsewhere with little improvement. He was pale, thin, nervous and not able to walk alone. Suspecting the trouble to arise from syphilis (he had a chancre ten years ago), he has been taking Hydriodic Acid and twice a week electricity. He has gained fifteen pounds; comes to see me walking alone, with the aid of a cane, with a wonderful improvement in the paralysis looking and feeling like a different man.

Miss S., about twenty-five years of age, came July last with a tumor of the breast. It started to develop about five years ago, which I suspected to be adenoid. After taking the acid she improved in health and weight, but complained of its becoming quite painful, and not finding it decreasing after thirty days' treatment decided to remove it, and did so. It proved to be a cystic tumor. I mention this case as the results of the operation were a little unusual, as it was done in August. After dissecting out the tumor, with the kind assistance of my neighbors, Drs. Amway and DeWolfe, we inserted a drainage tube, then stitched and strapped up the wound. Next day I removed the tube; third day eight or ten stitches were taken out. On the sixth day it had healed perfectly, without one drop of suppuration, none present even on removing stitches, all healing by first intention. It is my belief that the previous acid treatment contributed largely to this result, and I shall in future make further trial of it previous to operating.

About three months ago Mrs. M., aged thirty-eight, called relative to tumors—one on the neck and one on the side. Acid and electricity have been the treatment, she has gained about fifteen pounds. The tumor on the neck is all absorbed; the one on the side about three-fourths. She is feeling finely and looks quite like a young miss.

That Hydriodic Acid is one of our best agents in bronchitis, proof is not wanting.

That it is very efficacious in absorbing tumors, nodes and a variety of non-malignant growths, some of which may in time become malignant, I have no doubt.

That it will add flesh and improve the general health of nearly all, if not all, is no longer a question with me.

I am now testing it in scrofula, tuberculosis, anæmia and debilitated cases, especially when I suspect inherited maladies, with very satisfactory results.

I find other makes now in the market, but have not tried them. I have thoroughly tested yours and not found it wanting. I have no time to try others. I trust you may be able to keep it up to the present standard, and if so, from its sale alone, you should never want for bread.

I find the best plan is to give a teaspoonful in an ounce of water, and in a few days increase to a teaspoonful and a half, adding a little more water as the patient may desire. This, as a rule, is, I think, quite sufficient and will improve the appetite when a larger dose will sometimes act to the contrary.

Lumbago.—Chas. Lengel, Kansas City, Mo., September, 1885, writes: On account of the great value of your syrup of Hydriodic Acid as a medicine, and the signal service it has rendered me, I wish to make the following statement:

I have practiced medicine about twenty-nine years. Am stout and healthy and am fifty years of age.

On the 27th of February last I contracted a severe cold. Next morning, upon getting up, was very stiff and sore. As I was preparing to leave the office, was struck with lumbago, thrown to the floor, and became entirely helpless. I sent for the best physician in my neighborhood, whose diagnosis was lumbago. I told him to give me an injection (hypodermic) of morphia and atrophia, which somewhat relieved my unbearable pain.

I was ordered lithiated hydrangea ʒ j every three hours. A few hours afterwards a second physician visited me; who prescribed cinchonia salicylate, gr. v. every three hours, and emplast sinepis to my spine; still my misery increased.

Cupping was tried, and hypodermic injections repeated twice a day. One professional brother comforted me by the opinion that "I would be laid up a month or so."

The fifth day I was taken worse, my urine being hot and of a very high color, and

have forgotten all about the promise I made a year or two ago, namely, to report to you the results of two or three bottles of your syrup of Hydriodic Acid, sent to me on trial. At this late date I briefly state a few facts as follows:

Two years ago I contracted (from exposure) a severe attack of capillary bronchitis, confining me to my room most of the winter. As spring and warm weather approached, I hoped to lose my cough, which was very severe, but did not.

As I was preparing to go to the country the following summer one of your agents called with a bottle, or sample, of your syrup of Hydriodic Acid, saying you claimed for it special virtue in bronchitis. I requested a bottle or two sent to me to test in my case. It was sent. I took a few doses and went off to the country, forgetting to take the medicine with me; and, thinking the change of climate would cure me, I did not send for it. I improved, but, returning to the city in the fall, grew worse. I began to arrange for a trip south for the winter. Accidentally I came across the bottle of acid I had forgotten all about, then decided to give it the trial I had promised. I took it a few days and felt better, and stopped it, not believing it was due to the medicine. I grew worse very soon, gave it another trial, and in less than ten days I was very much improved. I again ceased taking it, and in a few days began to cough more. It is frank to say I did not have much faith in the medicine. After discontinuing it several times, growing worse each time, and improving every time I resumed its use, I was cured—not of my cough, but of my incredulity relative to its merits in my case. I soon after had such confidence in its helping me, that I gave up my trip south and worked, subjected to more or less exposure, all winter. I improved and gained in weight. I used it during the winter whenever I had a return of cough, and came out sound and well; and your acid will always have the *credit*, and *you* my sincere thanks. I should have mentioned that some time in October following you sent me a bottle to test in another case, Mrs. Dr. B., who had gone through a similar experience at the same time I had, with capillary bronchitis, and left her with a very troublesome cough. It was equally efficacious in her case.

In January last I began to prescribe it, and now regret I did not keep notes of all cases.

Miss F.—bronchitis—one year—much improved after taking it a few weeks.

In March was called to see Mrs. W., an elderly lady, about sixty-eight years of age, very feeble, with profuse bronchorrhœa, with which she had been afflicted for many years. At the time I was last called she had tubercular deposits in the apices of both lungs and so feeble she could not turn in bed. I did not believe that any medicine would be of much use to her, but concluded to try the acid. She improved, and after two months was able to go about, and as well as she had been for years, but not cured.

Mrs. N., about sixty-five, had suffered twenty-five years with asthma, from bronchitis; could not lie down when I first saw her—in six weeks so far improved that she left off treatment.

Mrs. L., aged about fifty. Bronchitis, five years; scarcely able to go up one flight of stairs; has taken it a few weeks with fine results.

After testing it in bronchitis with satisfactory results, I decided to use it in other cases.

February last Mrs. George M., aged about forty, called to consult me relative to a "fibroid tumor" of the breast about the size of an orange. It was growing, and, she said, becoming quite painful; I have known her for ten years; she was always a thin, delicate lady. I put her upon the acid treatment and local applications of tincture iodine. I soon found the tumor was being absorbed, and she growing fat. After three months' treatment she returned to her home in Connecticut, having gained twenty-five pounds, with scarcely a trace of the tumor. I directed her to keep up the treatment for a few weeks longer.

About two months ago Mr. M. S., from California, called relative to a paralytic stroke, which occurred about six months ago, affecting all the left side. He had been

It is probable that pulmonary syphilis is sometimes inherited. The autopsies made by Balzar and Brandhomme (*American Lancet*, 1888) upon syphilitic stillborn children showed characteristic syphilitic changes. Virchow, Lebert, and Depaul have described syphilitic nodules in the lungs of children, while Dr. Furgerson (*Medical News*, 1885) reported a number of cases of phthisis in children where recovery took place after the administration of specific medication.

Pulmonary syphilis unaccompanied by lesions elsewhere is rare. Oftentimes it is associated with laryngeal complications. The pathological change may occur in any part of the lung. Schnitzler found that the middle and lower lobe were most frequently affected. Bruen found the most frequent evidence at the base, while Dr. W. H. Porter believes that the apex is generally first affected, and that the lesions diminished from apex to base. In thirteen cases, including two under care since my last paper was written (May, 1888), the lesion was found in the lower lobes in seven and the apex in four. In the other two cases the middle lobe of the right lung was involved.

Diagnosis.—A history of syphilis and syphilitic lesions of other organs than the lung will, of course, arouse suspicion as to the cause, but in some cases even these are absent. The co-existing complications which I have found most frequent are syphilitic laryngitis and periostitis.

The physical examination in a typical case will show a well-defined area of dullness with the respiratory murmur in other parts of the lung normal. The line of demarkation between the healthy and the diseased structures is often clearly demonstrable both by percussion and ausculation. The absence of the tubercle bacillus and improvement under syphilitic treatment are, with the evidences before mentioned, nearly conclusive.

Treatment.—When a case of syphilitic phthisis is first seen there will be, generally, in consequence of the advanced stage of the disease, an immediate demand for tonics and good nutrition It is impossible to make much progress in such a case unless the functions of assimilation and secretions are stimulated.

"The mixed treatment," combining mercury and the iodides, have been for a long time held in high esteem. I have been in the habit of ordering the biniodide of mercury ointment locally where the lesion is well defined, especially if there is much pain. The counter-irritation seems to be of value here. More recently, and where there is much debility or where the iodides cannot be borne or freely used, I have been using Hydriodic Acid with good result. I have been led to consider it an almost necessary agent in all cases of syphilitic disease of long standing of the lung or air passages. In combination with chlorodyne (made by Squire's formula) I find Hydriodic Acid available in cases with much cough or asthma.

The great objection to Hydriodic Acid has been that it is so susceptible to change from heat and air that it is difficult to keep it of uniform strength. This objection has been overcome by Mr. R. W. Gardner, of New York, whose syrup of Hydriodic Acid is practically a permanent solution, as well as pleasant to the taste.

It must not be forgotten that in the successful treatment of syphilitic phthisis and laryngitis, not only should the patient be nourished, but such remedies selected as will act specifically and yet not interfere with assimilation.

Fatty Degeneration of the Heart—Amyloid Liver—Obesity.—F. A. Burrall, M. D., 48 West 17th Street, New York, June 29, 1884, writes: "I have been using your syrup of Hydriodic Acid for some time, and regard it as a valuable remedy in glandular enlargements, obesity, and fatty degeneration of the heart. It seems to me to afford an excellent method for exhibiting iodine. I saw one case of enlarged liver supposed to be amyloid, in which the gland diminished as shown by measurement while the patient was using this remedy. This may have been only a coincidence, but the fact was very apparent.

"I regard the medicine as a very valuable addition to our list of remedies."

Capillary Bronchitis, Fibroid Tumors, Syphilis.—James A. Williams, M. D., 164 West 34th Street, New York City October, 22,1886, writes: No doubt ere this you

corded may be fairly relegated to the first or third classes, *i. e.*, to those in which gummata are found, or to those characterized by fibrous exudation. A blood vessel may be pressed upon by a syphilitic deposit, or small nodules may develop within its walls, or contraction, due to fibrous tissue, may encroach upon its caliber. The injury to the vessel is a complication, but the local condition is the gummata, or the newly-formed fibroid tissue.

Specific Fibroid Change in the Lung.—The third proposition, that syphilis may give rise to a fibrous exudation in the lung, is a most important one.

Many writers believe that a fibroid change, an interstitial new formation, is the characteristic pathological process in the majority of cases of pulmonary syphilis. Dr. Pancritius, a general practitioner of Berlin, published a work of 300 pages in 1881 on syphilis of the lung. While he does not claim to have found a large number of syphilitic cases that had pulmonary gummata, he has noted an interstitial pneumonia with fibrous exudation along the course of a bronchiole or pulmonary artery.

Dr. W. H. Porter, in his essay of eighteen months ago, already referred to, carefully describes new connective tissue change as "broad bands closely resembling tendon tissue, which, also, involves the vesicular walls." Oftentimes the structure between the capillaries and the air vesicles is much thickened. This necessarily renders the interchange of gases more difficult, and explains in part the dyspnœa so often attendant upon the disease when the lung is greatly involved. Sometimes fibroid thickening is found in the small bronchi, and even the vesicular spaces contain inflammatory exudation. The changes taking place in the vesicles, as found by this author, are so interesting that I will quote his record in full.

"(a) The air spaces are filled with red blood disks, leucocytes, desquamated epithelium, and fibrillated fibrin, identical with that found in the second stage of a lobar pneumonia."

"(b) Others were filled with large, round, distinctly nucleated epithelial cells, with a diameter varying from one fifteen-hundredth to one two-thousandth."

"(c) Others were filled with discolorized round cells, as in gray hepatization of lobar pneumonia."

"(d) Others contained a granular degenerating material which would not stain. The marked features of these changes was that all four conditions were irregularly intermingled as though in each air sac it ran its course independently of all the rest, going through the red and gray hepatization; at this point degeneration, rather than resolution, set in. The thickened walls prevented absorption, and the degenerating inflammatory products probably account for the copious expectoration. This process is best classed as a degenerative pneumonia and one peculiar to syphilis."

Bruen says that the interstitial new formation of which we have spoken "is often evoked by antecedent catarrhal inflammations." The smaller bronchi are narrowed, or even excluded, and new blood vessels are freely produced.

Greenfield and Goodhart believe that the vascularity and high grade organization of the new growth renders it pathologically distinct from ordinary tubercular processes.

Virchow and Green maintain that in syphilis the interstitial changes are among the first pulmonary lesions, while in phthisis the fibroid change is secondary, or, at most, simultaneous with changes in the alveoli.

Much more proof might be adduced to show the existence of a fibrous exudation in the lung due to syphilis and having distinct characteristics.

Tubercular Phthisis in Syphilitic Subjects.—Whatever diminishes the power of resistance to disease in the human subject is a special invitation to an invasion of phthisis. Syphilis in this way is often a forerunner of tubercular phthisis, especially if in the specific treatment due care is not taken to support the strength and aid proper assimilation. I believe that too much stress cannot be laid upon this point, for we have all of us seen instances of rapidly progressing phthisis following in the wake of syphilis, where there was no evidence of either gummata or fibroid processes, but in which were all of the symptoms of tuberculosis, even to the existence of the bacillus.

SYPHILITIC PHTHISIS.

By WILLIAM PORTER, M. D.

Physician to the Throat and Chest Department of the Protestant Hospital, St. Luke's; Consulting Physician to the City Hospital, St. Louis.

(Reprinted from the *New England Medical Monthly.*)

Among the many causes of chronic processes in the lung a very important one is syphilis. It is probable that many of the good results which have formerly been attributed to the use of the iodides in phthisis have been attained because the condition was syphilitic rather than tubercular.

Be that as it may, we now have abundant proof of the fact that syphilis does cause a chronic deposit in the lung which, in both its local and constitutional tendencies, may resemble, and often be mistaken for, tubercular phthisis.

In a paper read before the Missouri Medical Society, in 1877, I endeavored to show that syphilis might invade the lung in different ways. The cases reported in that paper were, so far as I can learn, the first recorded histories of syphilitic phthisis in this country, although Fournier had given his well-remembered lecture the previous year, and Goodhart's reports in London were published the same year.

In May, 1888, eleven years after, I had the pleasure of again reviewing the subject before the same association. The position was no longer a doubtful one. Many contributions had been made to the subject during a decade, and many cases recorded.

So much testimony has been offered by competent observers as to the existence of a condition which we may well call syphilitic phthisis, that I will not cite cases in affirmation, but will discuss briefly several of the manifestations of syphilis as found in the lung.

In both of the papers to which I have referred these propositions were offered:

1. From syphilis may result specific deposit or gummata in the lungs resembling the nodules formed in tubercular disease.
2. Syphilitic processes may cause arterial occlusion in the lung.
3. Syphilis may give rise to a fibrous exudation in the lung, or specific fibrous phthisis.
4. Syphilis may hasten the development of ordinary phthisis by weakening the power of resistance in a constitution in which there is a tubercular tendency.

Pulmonary Gummata.—In support of the first statement, in 1877 I had but the history of a single case which I recalled as almost typical, and though the final proof was wanting in this case, I felt justified at the time in citing it as a case of syphilitic deposit in the lung.

A number of cases have since come under my notice, in which the history, the associated symptoms and the result after the exhibition of specific medication left no doubt in my mind as to the nature of the invasion.

While detailed accounts of individual cases would be burdensome, I will give briefly the conclusions of a few of the many writers upon the subject.

Schnitzler [Vienna, 1880] describes infiltrations of the lung and speaks of the importance of distinguishing between tubercular and syphilitic phthisis. Goodhart, Fournier, and Virchow have done much to impress the importance of this subject, while in America valuable contributions have been made by Dr. E. T. Bruen, in *Pepper's System of Medicine*, and Dr. W. H. Porter, in the *New York Medical Journal*, August, 1885.

Gummata are not so frequently found in the lungs as in other organs of the body, and are generally associated with other local manifestations.

Syphilitic Disease of Pulmonary Blood Vessels.—That syphilitic processes may cause arterial occlusion in the lung is susceptible of proof, but the few cases re-

Fibroid Tumor.—Dr. H. F. Stowell, Rochester, N. Y., writes: "This tumor was a fibroid in the region of the parotid gland, of twenty years' duration. Gardner's syrup of Hydriodic Acid was used in the case.

There was a perceptible shrinkage during the first two months of treatment, after which, it remained stationary. There was however, total relief of various unpleasant sensations in the growth, which, sometimes amounted to pain.

The patient also suffered from an inveterate eczema [life-long] and this has entirely disappeared.

I have since found, that eczema is favorably influenced by the acid, and that it is very useful in syphilitic and scrofulous affections, as a substitute for potassium iodide."

GRIP—CLINICAL NOTES ON THE USE OF HYDRIODIC ACID [GARDNER'S SYRUP.]

BY C. L. DODGE, M. D., KINGSTON, N. Y,

(Reprinted from the *Practitioner's Monthly*, April, 1892.)

"Case I. Private practice, W. T. T. æt. forty-five. He had an attack of the grip in December, from which he made a poor recovery. The cough persisted, his appetite returned slowly, and his general health was much below par.

Early in February, he had a second attack of the grip. This was not so severe as the first, but in his feeble condition prostrated him completely, forcing him to take his bed. His cough was very dry and "tight," causing him great pain in the left side. This was relieved by small doses of morphine and ipecac. After the cough became looser and the pain subsided, I gave him two-dram doses of Gardner's syrup Hydriodic Acid three times a day, with small doses of quinine and whiskey. He made a perfect recovery and is looking and feeling better than he has in years.

Case II. Private practice, J. C., laborer. He had had several attacks of pneumonia and has 'weak lungs.' He had a very severe attack of grip in December, from which he made a very slow recovery. I used the syrup Hydriodic Acid in the latter stages with decided benefit. He had a second attack early in March, accompanied with several severe hemorrhages from the lungs. After employing the usual remedies for the hæmoptysis and enjoining perfect rest in bed for a week, or more, I began again with syrup Hydriodic Acid. He soon began to improve, the cough gradually disappeared, and his strength slowly returned. He is now at work on a farm."

Idiopathic Asthma.—Syphilis.—Lead Poisoning with Wrist-Drop.—Louis Lewis, M. D., M. R. C. S., Philadelphia, late of London, writes: I think it may interest you to know that I was in the habit of prescribing your "syrup of Hydriodic Acid" frequently in my London practice, with real success, in cases of idiopathic asthma, and also in syphilis. I used to obtain it through Messrs. Allen & Hanburys, and extolled its employment in these cases, through the medium of the *British Medical Journal*. Since my settlement in this country, I have still continued to recommend it, and hold letters from medical men confirming my experience of its value. I have also found it of great value in a case of lead poisoning, with wrist-drop.

SYRUP OF HYDRIODIC ACID.

By the late WILLIAM F. HUTCHINSON, M. D., Providence, R. I.

(Reprinted from the *New England Medical Monthly*, August, 1893.)

Dr. R. W. Wilcox, of the New York Post-Graduate School, has done good service to the profession at large when he called attention to the many and certain valuable qualities of the above-named remedy. That he gave credit for the preparation of almost the only reliable form of the drug with which American physicians are acquainted, Gardner's syrup, to formulæ of Duroy and others, rather than to the well-known chemist whose study and experiment brought it where it can be safely and conveniently used, and whose name it bears, is a mark of ignorance or carelessness with which he is chiefly concerned, and a personal matter for him to settle.

To us, the fact remains that Mr. Gardner has provided a method of administering iodine that is efficient, safe and pleasant, one that pleases patients and makes long continued dosing with this powerful alterative easy and harmless.

Since 1880 I have used this syrup largely in a practice which is restricted to nervous diseases and am thus debarred from the large experience which a wider field has conferred upon many of my colleagues who speak highly of it; but in my hands it has proven of great value. When medicine must be continued indefinitely, as in some cases of sclerosis or neuritis, in small unvarying quantities, it must be in such form as will not disturb digestive organs or become physically disagreeable.

Nor must it be of cumulative nature. Thus we are prevented from availing ourselves of many valuable remedies like mercury, because of the latter tendency, and of others unpleasant to taste or smell, such as cod liver oil or bismuth, both of which assert their repulsiveness in any combination that does not destroy them.

In iodine we possess an agent endowed with several qualities of which we have constant need. It is not only alterative, but solvent and sorbefacient, and would have been in far more generul use but for the fact that a large number of persons, perhaps a majority, have found that digestion was so seriously interfered with by its ingestion in the only form familiar, iodide of potash, that they would have none of it. In that form it produces a violent and disgusting coryza, with hoarseness and sore throat, sometimes so severe as to be alarming.

Some years ago, I recall ordering for a tabetic patient five grain doses of potassic iodide in syrup of sarsaparilla. The next day the man returned to me with blood-shot eyes, streaming nose and rancous voice, crying out that he had been poisoned sure, and was only withheld from swearing out a warrant for my arrest on a charge of attempted homicide, by his friend's statement that a mistake might have been made by the druggist, and he had better go slow with the doctor who was probably the only man who could correct it. To appease him, I swallowed half a dozen doses, and in a few hours was as uncomfortable as he was in the same way. That settled the matter, except that all hands, myself included, set me down for a fool who could not tell what his own medicine was going to do.

Gardner's syrup has changed all that. It is agreeable to the eyes, taste and stomach, non-irrtant to mucous membranes and keeps well. It is best to keep it cool and dark, but I have a bottle in my light rooms in Providence, two years old, that has remained unchanged, and at my suggestion, Mr. Gardner has recently sent samples to a leading physician in the West Indies, who will give it a thorough test in a tropical climate.

It is too valuable a remedy to remain uncopied, but I am quite satisfied that Mr. Gardner is entitled to priority of its preparation in the form which bears his name and that his syrup is the only one of several that I have seen which remains unaltered for a length of time.

tions of syrup of Hydriodic Acid must be of the strength of Gardner's in order to produce the above results. This will be known by its quickly resolving itself into iodine, turning red upon exposure to heat—in which state, however, it must not be used.

This is the only preparation on the market I have any faith in.

EXOPHTHALMIC GOITRE.

Dr. W. B. Fletcher, Indianapolis, Ind., Oct. 23, 1893, writes: "On the 14th of August, 1893, Dr. Logan Stanley, of Fincastle, Indiana, brought to me a patient suffering from exophthalmic goitre. She was about thirty-eight years of age; the disease had existed about a year. Eyes protruding and congested—could not close the lids completely; pulse 130 to 140; breathing difficult. Seeing that Hydriodic Acid is recommended in "Wood's Hand-Book of Medicine" in the article upon exophthalmic goitre, and having your preparation at hand, I prescribed it, conjoined with rest, proper diet, etc.

The result in two months is as follows: quoting from Dr. Stanley's letter of the 22nd inst. "From August 22 to October 22, she has gained twenty-eight pounds in flesh, eats heartily and sleeps well; pulse 85 to 100, according to the exercise she takes."

In a former letter from her physician, he states that "the eyes have resumed a more natural expression, and she is feeling none of the distress or pressure that was formerly so annoying."

CONSTITUTIONAL TREATMENT OF TUBERCULOSIS, STRUMOUS AND SYPHILITIC DIATHESIS.

BY THOMAS H. MANLEY, M. D., NEW YORK.

(Extract from a Surgical Clinic, at Harlem Hospital, New York, October 19, 1893.)

Dr. Manley in exhibiting cases on which he had operated and on which he would soon operate, said, that it was futile and useless for one to attempt to cure many constitutional conditions which presented local lesions, without in the first place attempting to tone up the system, and after operations continuing systematic treatment until the general health was fully restored. This was particularly the case with strumous children, tuberculous adults, and a large number of those whom we suspect of suffering from secondary or tertiary manifestations of syphilis.

For this purpose many of the various alteratives might be employed with advantage.

Personally he preferred a preparation known as Gardner's syrup of Hydriodic Acid, for the reason that it contains alterative and tonic properties so combined as to obviate the many objections against mercury and the potassium salts. It was the ideal way of administering iodine. It was well tolerated by the stomach, agreeable to the taste and acted with great energy. In all of those sort of bone, joint, and glandular diseases, dependent on tubercle and syphilis, his custom was to commence its use by small dosage which was steadily increased until its effects were manifest. Indeed in most cases its timely and appropriate employment would obviate the necessity of any sort of surgical interference.

that there are none which equal that which you put up. I will use no other, as I have found by experience that they do not produce the same results, and they are all more irritating than yours."

SYPHILIS, TUBAL DISEASE, LEUCORRHŒA AND MEMBRANOUS DYSMENORRHŒA.

By A. ROSE, M. D., Lebanon, Ky.

(Reprinted from *Medical Mirror*, July, 1892.)

I regard Gardner's syrup of Hydriodic Acid as the one preparation of all others deserving of the name "alterative," and the one the medical profession has been looking for in vain.

As a tonic stimulating alterative it stands alone, in that it is the most powerful in its effects upon glandular bodies, upon mucous surfaces and upon serous membranes that has ever been known, while it is non-toxic, non-irritant and an agreeable, tolerant medicine.

Iodide of potassium, syrup of iodide of iron, or any other form of iodine compound, in comparison with this particular preparation, is not to be even remotely considered.

I have used it in syphilis, where anæmia was marked, when neither potassium iodide, syrup of iodide of iron, or mercury in any form could be tolerated for one moment; anæmia disappeared, the continuous headache instantly ceased, sore throat got well at once [with a few applications of zinc. chlorid. gr. xl aquæ, one ounce,] all glandular swellings disappeared. The gummata everywhere vanished into thin air, and the irruption was held in "statu quo" until I could give the patient a few calomel vapor baths, preceded, of course, by steam sweating.

I recommend mercurial plaster after the formula prepared for me by Seabury & Johnson [their improved formula], the same to be renewed every six days.

I use a square decimeter of the plaster directly over the spleen; this together with the syrup is sufficient to produce an agreeable cure in any given case. Only dry calomel should be used upon external sores. The acid entirely supplants the iodide of potassium and syrup of iodide of iron, both in its alterative and tonic effect.

I have tested it in all forms of syphilis—primary, secondary and tertiary. In the latter there are but few manifestations of the disease after having used the remedy. The secondary symptoms are held in abeyance until it is convenient to administer a few steam and mercury vapor baths; when by the further use of the mercurial plaster, previously mentioned, and a continued use of Gardner's syrup of Hydriodic Acid, every physician may hopefully and confidently expect the happiest results to follow at once.

This preparation is not only pleasant to the palate, but it tones up the stomach, becomes an appetizer, relieves all headache however intense, resolves glandular trouble, heals mucous and serous membranes, especially the tonsil and throat.

But there is a wide field of usefulness for this preparation that so far has been little dreamed of, viz.: In tubal disease of the ovary, rheumatism of uterus, leucorrhœa and membranous dysmenorrhœa.

My experience in gynæcology and the success following the use of the remedy proves conclusively that this preparation will excel every other preparation now known in the above-named complaints.

I unhesitatingly recommend it to my brother physicians, and can readily see its superiority to potassium iodide, and that it will largely supplant the latter as a means for the internal assimilation of iodine. Upon trial the reason will be apparent, and only equal the astonishment at the result obtained by the remedy itself. All prepara-

standard of strength, and the physician who prescribes them does not know what effects he is to get from them till he sees its operation in the system. It is not so with this syrup of Hydriodic Acid. I have failed to find any variation in the amount of iodine which any sample contains. It is always the same and can be relied upon in every case. I have tested several samples found in the market and must say that yours stands the test best of all. A very simple test, not quantitative, is to add a little spts. nit. ether to a solution of the syrup. A reaction instantly occurs which gives a rich red appearance in the cup. Iodine is at once set free.

While this short letter will not permit me to give cases in testimony, still I would just like to mention a case or two by way of illustration.

One I will mention especially, which is as follows:

On the fourteenth day of February, 1888, I was called to see a child aged about four years, girl, who was suffering from a congestion of the lungs, with croupous respiration, with all appearances of being near its fatal termination. There was extreme dyspnœa, from the excessive secretion from the lungs. I at once began the use of the syrup in doses as follows: I made a solution of the following strength: To three ounces of the syrup I added one ounce of simple syrup, and of this mixture I gave the child a teaspoonful every two hours. I directed this till some of the symptoms of the constitutional effects should appear, which I described to the nurse. The next morning when I called I found a decided improvement in the respiration. The secretion was almost stopped and the child breathed much better. I directed a poultice of ground flax seed applied to the child's chest, and the syrup continued as before, at intervals of three hours. This was continued for the next three days, when there was no further use for the remedy. The little patient was able to sit up, and my visits were discontinued. In these cases it is a pleasure to prescribe this remedy, as it is taken without any dislike on the part of the child.

In cases of incipient consumption I do not find any remedy which is so effectual in giving relief to the excessive expectoration as this syrup of Hydriodic Acid. I give it for the first three days in doses of from one to two teaspoonfuls every two hours, together with some preparation of cod liver oil, or this remedy with maltine as found in the market. These remedies work well together, and most of the cases are benefited if not cured. In cases of consumption, scrofula and syphilis, and the chronic cases of eczema not of a specific nature, it is a most excellent remedy. In cases of eczema where the case is complicated with a syphilitic taint, this remedy is all that could be desired, if used simultaneously with the mercurial preparations usual in these complaints. It is very seldom that we find any person that cannot take the remedy. In cases in which the constitutional peculiarities were of such a nature that the patient could not take the iodide of potassium, this remedy will be found to be well borne.

I know of no better remedy in bronchitis, either chronic or acute. In rheumatism it comes as near being a specific as quinine in intermittent fever. In fact, in any case in which iodine is indicated it is the most eligible form in which to administer it. In all cases of catarrh, whether of the respiratory or of the uterine systems, I find it to be a most effectual remedy.

These remarks might be much extended, but space will not permit."

Laryngitis (Sub-Acute).—Dr. Garlock, June 5, 1891, writes: "I have of late been using your syrup of Hydriodic Acid for sub-acute laryngitis with good results. It is far superior to the old-fashioned preparation of chlorate of potash and tincture of the chloride of iron which is a standard remedy for that disease.

It is superior in almost every way, and especially it does not injure the teeth. It can be used for all the complaints of childhood, where the old remedies would fail from their acridity.

There are a good many imitations of the syrup placed upon the market, and many are induced to try them and fail, and the acid syrup is condemned. I can assure you

LA GRIPPE AND SEQUELÆ.

Q. A. Bridges, M. D., Berlin Mills, N. H., Oct. 1, 1890, writes: "It may be of interest to you to know the following facts, as I noticed by your pamphlet sent me some time ago, that no other physician has had a similar experience.

Since la grippe left us last winter, I have been called to several patients who complain of having pain and a prickling sensation, not unlike that of a foot being 'asleep,' in their upper or lower extremities, or both, and growing more troublesome and unendurable from week to week.

Having tried nearly everything, and meeting only with failure, I at last hit by mere chance upon your syrup of Hydriodic Acid, and am delighted to say, it was a great success. I have given it to two patients, both of whom are over fifty years of age, in doses of twenty drops to half a drachm, before meals, and the disagreeable symptoms I have before described are all gone. I see no reason why it will not work in other cases."

BRONCHIAL CATARRH AND CATARRHAL AFFECTIONS OF THE THROAT AND LUNGS.

F. R. Garlock, M. D., Racine, Wis., June 6, 1888, writes: "In relation to your syrup Hydriodic Acid, I can say that I have used it quite extensively in my practice. I find it to be a very superior article in cases of bronchial catarrh, and in fact in all catarrhal affections of the throat and lungs. Especially is its use very advantageous in children who are suffering from congestion of the lungs from sudden colds. I like its use much better than that of potassium iodide, as it does not nauseate the stomach, nor does it cause the other disagreeable effects of that remedy. In fact, in all cases in which iodine is indicated, the syrup of Hydriodic Acid, as prepared by you, I consider an excellent remedy.

August 8, 1889, he writes: "Since my last letter to you of the 6th of June, 1888, I have extended the use of the syrup of Hydriodic Acid (Gardner) to other complaints than those mentioned. Then I wrote to you of its application in cases of pulmonary catarrh and kindred affections. I have prescribed the syrup in catarrhal affections found in other situations; I have used the same as a constitutional remedy in vaginitis, urethritis and catarrhal affections of the intestinal tract. In these situations I have derived most decided effects.

In the chronic form of vaginitis, not of a specific nature, the remedy has the same effect to relieve the disagreeable and disgusting discharges as in any other forms of the complaint. It changes the nature of the secretion, and where it was offensive before it becomes innocuous. It acts as a disinfectant as much as many of the remedies which have been placed upon the market to be used for that purpose.

In those forms of skin diseases in which iodine is indicated it fulfills a good purpose. It is a mild alterative, and can be used in any situation in which iodine or iodide of potassium can be used, and without the disadvantages of disagreeing with an irritable stomach. I have given it to young babies who could not take the iodide of potassium.

It is almost a specific in the catarrhal affections of children; especially those which occur during the winter months. All about the great lakes of the northern United States these affections prevail to so great an extent, and the fatality from these sources is very high. The most delicate stomachs are not nauseated by the syrup.

During pregnancy, when the iodide of potassium cannot be given with safety, this syrup is most harmless. In prescribing drugs one of the most essential things is to get a pure article. Many of the so-called pure drugs are only pure in that they look clear and transparent, but chemically they are far from being pure. They have no definite

It is of decided value in children of a strumous diathesis, enlarged lymphatic glands, etc.

One great trouble is to obtain a reliable article of the syrup, and our experience is that R. W. Gardner's is the only reliable article in the market that will never fail, if fresh when bought. The syrup should be clear, and if it be of a brownish color it is unfit for use.

It may be that the acid in this combination has some influence independently of the iodine. There is no question but what the results are unattainable by any other combination of iodine.

GARDNER'S SYRUP OF HYDRIODIC ACID IN CROUP.

BY J. STINSON HARRISON, M. D., WASHINGTON, D. C.

(Reprinted from the *Medical Mirror*, August, 1891.)

Croup.—I wish to make a statement in regard to the use of syrup of Hydriodic Acid (Gardner) in the treatment of croup.

A short time since I was called at night to see a child two years old, who was suffering with a severe attack of spasmodic croup.

The father said that the child had been suffering all day; that he had used all the ordinary croup remedies, but with no avail, and feared that his boy would die. I plainly told him I feared he would, but that I would do all I could for him.

I immediately gave him a small teaspoonful of syrup of Hydriodic Acid in a little water. At the end of the first hour, the child seemed somewhat relieved; I then repeated the dose, and at the end of the second hour, the child was decidedly improved, passed the night comfortably, and the next morning was up, playing about the room; the parents, of course, were greatly delighted, and so was the physician, as I had never used the remedy before.

A short time after this I was called to see another "croup case," child same age, treated him in the same way, hot poultice over the chest, plenty of cold water, and Gardner's syrup of Hydriodic Acid, with the same happy result.

It is now my main reliance in every case of croup, and with "la grippe" I always use it with decided advantage.

P. S.—I am not aware that anyone has used Gardner's syrup before in croup.

Subsequently, under date of Oct. 29th, the Dr. writes as follows: "I am still using Gardner's syrup of Hydriodic Acid to my entire satisfaction, in nearly all cases involving the breathing apparatus, particularly croup, laryngitis, asthma, and bronchitis; and the more I use it, the more highly I value it. It hardly ever disappoints my expectations."

Under date Nov. 2, 1891, the Dr. writes, "I am using syrup Hydriodic Acid in a case of pneumonia, with most gratifying results. I hardly know now how I should get along without it."

SYPHILIS.

Dr. Richard H. Taylor, Hot Springs, Arkansas, May 19, 1889 writes: "Col. Y——, a prominent citizen of Tennessee, consulted me about a very ugly sore, involving his entire nose, and which had frequently been pronounced lupus. The history of the case led me to suspect syphilis, and I resolved upon constitutional treatment. He told me that he could not take iodide potassium, as his stomach utterly repudiated it. So I suggested Gardner's syrup of Hydriodic Acid. He is now upon the third bottle and is almost well, in fact leaves for his home this week delighted with his rapid and pleasant treatment. Locally for one week, I applied the gelatine ointment of chrysarobin, which promptly relieved the intense soreness."

GARDNER'S SYRUP OF HYDRIODIC ACID IN THE TREATMENT OF EXOPHTHALMIC GOITRE.

By J. B. CARVER, M. D., Fort Scott, Kansas.

(Reprinted from the *Kansas Medical Catalogue*, October, 1890.)

Up to six years ago, all my efforts to treat this affection successfully had been useless. After a more or less prolonged trial, and various changes of medicine, the patient would gradually disappear, to my great relief.

It was about this time that I came across Hamilton's article on this disease and his recommendation of this remedy, and it so happened that a case soon presented itself.

The lady had suffered three years; had tried all manner of treatment, change of climate, etc. The heart's action was so tumultuous that the entire body vibrated. She could not stand still, and of late had been unable to sleep, and it was on this mainly that she sought relief.

I persuaded her finally to try the syrup, securing a promise that she must take at least two bottles before she discarded it as worthless.

No other medicine was given except a few Dover's powders. No noticeable relief took place until after she had taken fully two-thirds of a bottle (except that she herself expressed herself better), when an almost constant uterine hemorrhage began to cease, and it was also noticed that she was stronger. The pulse could be counted at 140. From this on improvement became rapid, and by the time she had taken the second bottle pulse had fallen to 100.

She had gained in strenght and the goitre had shrunken one-half its former size, and the protrusion of the eyeball seemed less. She soon after left for home and up to a year ago had remained well.

It was either that or the following summer that Mrs. W. L. came under observation for the same disease. She had been, however, but a short time affected. She began to improve and recover by using the syrup. This summer she returned. She had waited a month, at least, before she came to me, suffering from diarrhœa and indigestion, and she could not use the syrup on that account.

For six weeks she was treated by varicus remedies, but galvanism of the pneumogastric was the only remedy of any effect, applied after the method advised by Barthalow—the positive under the ear and the negative at the epigastric. A five minutes' sitting would control the diarrhœa at once.

It was applied to the tumor. For a time it seemed that a cure would be effected. She became stronger, but after a time it became necessary to increase the number of cells in strength from four to as high as twenty milliamperes, without any appreciable improvement, and the treatment was dropped and replaced by the syrup spoken of. During the treatment by galvanism there had been an improvement in her digestion, and the diarrhœa totally arrested. In fact, the current unquestionably benefited her very much. Anyway, she was now able to retain the syrup, and in an incredibly short space of time her general health had rapidly improved, she gained in flesh-weight, her pulse fell to 110.

She has now taken the syrup three weeks. The value of the Hydriodic Acid as an alterative is, I believe, generally conceded, but its special value in this disease is not so well understood.

It is of interest to know why iodine in this form is so much more effective, as there is no question about its value over and above all other forms of iodine.

Two years ago we took occasion to test the remedy in a case of asthma, due, largely to fatty heart. At the first trial it seemed to be of decided benefit, but at the usual fall relapse no possible good could be noticed.

In February, '89, I was examined by eminent authorities in New York, placed under treatment, with the suggestion that I spend my future winters in a dry southern climate. This suggestion I fully intended to accept, but after following the treatment closely until July, I returned to the city for a second examination.

The distinguished medical man who had been so positive in his advice, reconsidered it, and told me that the results of treatment had so far surpassed his expectation, and that I was so nearly recovered that I might remain in my present location. A few days ago I was examined by a very careful man for admission into an insurance order; I gave him this history and mapped out for him the locality of the old trouble. He declared after thorough physical examination that he could discover no local evidence of adhesion, or any other morbid condition whatever.

Of course, other measures were not neglected, but the one essential feature of treatment which was followed and depended upon, from first to last, was the use of Gardner's syrup of Hydriodic Acid. I had every opportunity to observe effects in detail, such opportunity as can only be found in this otherwise undesirable combination of doctor and patient in one person.

And I say now deliberately, that if I were compelled to go through such a siege and were allowed only one measure of treatment, I should select the systematic use of Hydriodic Acid to be that one measure.

Without going into tedious details, I wish to mention one cardinal point. In my own case, as in many others (may I say a majority?), this tendency to pleurisy is associated with a tendency to the development of muscular rheumatism and finds its exciting cause in the peculiarities of a "rheumatic climate." Bring together, then, a "bilious rheumatic diathesis" and a climate of this character and the chances are largely in favor of pleurisy as a result. Of course, nothing can be done for the climate, but to move out of it, but we can do the next best thing, we can remove the predisposing cause. After years of patient research and experience, I find nothing which will compass that desirable object with such certainty and dispatch as the continuous use of Hydriodic Acid in moderate doses.

My patients frequently express their surprise at what they regard as the "incidental" relief to the rheumatic symptoms when the Hydriodic Acid is used.

This remedy gives us all the specific effects of iodine in this connection, and the stomach escapes the usual damage, a point of incalculable value in these cases.

In the treatment of pleurisy with abundant serous effusion, the great problem is to get rid of the effusion and to prevent its re-accumulation.

As a result of very positive clinical experience in a very large number of cases in the last twelve months, my routine practice is to perform paracentesis and give a course of Hydriodic Acid as after treatment.

In fact, if the operation is not too urgently indicated, I usually begin the use of the acid in advance, so as to have the patient's system somewhat under its influence when the operation is done. Under this plan of treatment I have never had to tap a second time but once, and never a third time in a single instance. Of course I am not so extravagant as to say that this would be the uniform result; but I do say that the treatment here outlined has produced in my hands by far the most satisfactory effects I have ever secured in "pleurisy with effusion."

Not only does re-accumulation seem to be prevented, but the temperature is controlled, and I do not find evidence of degeneration of the remnant of effusion—an occurrence which has always been one of the serious dangers of the operative treatment in such cases.

but with whom, arrest of medication, or a material substitution cannot be considered. These *idiosyncrasic sports* of pre-eminently, the organic salts are so extravagant, preposterous and so varied in form, that their study and report has created quite a department of itself in the literature of therapeutics; but the more striking cases, presented in the pages of Lewis, Jonathan Hutchinson, etc., might many times be offset by a record of the experience of many an observant practitioner who seldom or never contributes material to the reading medical public. But "*verbum satis;*" suggestion and experience of others must further develop in this province of exceptional moment but which we dismiss without further words.

Third.—For the less precipitate cases; cases which plainly indicate recourse to iodics but permit a choice in measures and abundant time in their application. The *more chronic conditions of asthma* may be cited prominently; emphatically whenever the iodides are not kindly received. Many conditions of *bronchial or pulmonary catarrh* show most gratifying treatment under Hydriodic Acid treatment. *Chronic accumulations of scrous fluid* also demand mention in this brief review.

SYRUP HYDRIODIC ACID IN THE TREATMENT OF PLEURISY.

By LEWIS G. PEDIGO, M. D., of Roanoke, Va.

One of the most important uses of Hydriodic Acid has not received the attention its importance would seem to demand. I refer to its use in the treatment of chronic pleurisy, and its controlling the after effects of certain kinds of acute pleurisy. The two types of this disease of which I wish to speak more particularly in the present connection are:

First.—Pleurisy with slight adhesive exudation.

Second.—Pleurisy with extensive serous effusion.

I believe it safe to say that Dr. J. B. Leaming has finally succeeded in convincing the profession that a large majority of the cases of phthisis have their origin in the so-called dry pleurisy.

It is a very insidious and a very prevalent disease. Almost every autopsy within the recollection of any medical man, performed upon a subject of over thirty years of age, has revealed pleural adhesions of variable extent.

In a large proportion of these cases, pleurisy was never discovered during life. A great deal of the chronic bronchitis of which we hear so much, is really chronic adhesive pleurisy with secondary envolvement of the bronchial tubes.

This type of pleurisy, then, is of the first importance.

Firstly.—Because it is exceedingly prevalent.

Secondly.—Because it is easily overlooked in the first developments, and

Finally.—Because it is usually the initial and only curable stage of pulmonary consumption.

Given a case which has been recognized before it has gone too far for anything but palliative treatment, the urgent question is—what shall we do to arrest the morbid process in time to save the patient's life?

I feel that I can speak with something like confidence if not authority, on the subject.

Twelve months ago I had a rather severe sub-acute attack of this nature in my own person. Whatever harm it may have done, it served the good purpose of calling my attention to the chronic process which I have reason to believe had been going on insidiously for some time.

which does more mischief physiologically, than it seems to do good (therapeutically), must be discontinued; and such problems or one of like element, are too often confronted in iodide medication.

And occasionally a dilemma like the following presents: The medicinal service of a derivative of iodine is found to be beneficent and essential; substitution of a remedy from some other chemical class will avail nothing—the patient, by turns, takes up and lays down again his sodic iodide: has recourse to other iodides, later to that of starch, again to the smallest (rational) doses of the offending drug—and still the physiological penalty follows him, hardly ever abating in degree. A degree is finally reached which is beyond endurance.

Now it may be doubted, with sole exception of Hydriodic Acid, if there is any derivative of iodine, of assured medicinal power, the physiological power of which is so little pronounced as frequently not to be apparent. The remark has been made already that its influence in the latter province was chiefly made evident by contrast; repeatedly, it is not declared at all, under circumstances of skilled medication, though the material be long used and often repeated. It would even seem that upon the stomach the alimentary canal and their functions, as well as elsewhere, and that upon various secretions the impression of Hydriodic Acid is as kindly, as little given to any disturbance as is its first impression on gustatory nerves and the secretions of the mouth.

Indeed this apparent absence of action, the contrast presented with what is sure to be observed in the operation of all other iodic preparations, in one degree or another, has led physicians to question the existence of medicinal properties in Hydriodic Acid; and such skepticism was quite prevalent at one time.

But the further we advance in the department of physiology in therapeutics, the more familiar we become with the physiology of drug action; the more evidence do we receive of the substantial truth of two general principles, viz., and firstly, action is not necessarily displayed in, and limited to reaction, irritation, disturbance; secondly, there are valuable and potent drugs, the physiological action of which, when they are skillfully exhibited, is alone kindly, consistent with and helpful to the purpose sought and procured in their therapeutic action. Under such circumstances the practitioner who looks for reaction, irritation, as constituting the sole evidence of impression in the physiological realm, will be disposed to deny the reality of such action altogether; and perhaps reach a further conclusion that, therefore, therapeutic action does not exist, that the remedy in review is inert and without value.*

Therapeutics of Hydriodic Acid.—Two "indications" present a claim for brevity in this our closing section. There would seem to be propriety in the generic presentation alone of the chief therapeutic applications of the remedy, such treatment can be dismissed in few words and a treatment otherwise, by clinical reports, is less suitable to a paper of scope like this. Again, no other opportunity will appear for us to pay respect to a previous promise of brevity at some point, as offset for the space in the pages of the journal which were so freely appropriated.

First.—The use of Hydriodic Acid (with very rare exception) wholly avoids the variously exerted irritative effects of the other iodics; and which, if they are less serious, when confronted with that grosser development of like irritation, wherein a toxic action has absolutely taken the place of a physiological, are still scarcely of less concern to the practitioner because of their much more frequent occurrence. Again, its pharmaceutical preparation offers a substitute for remedies more or less unpalatable (throughout the entire class) to the young subject, the patient with delicate stomach, and with whomever the palate may also demand respect.

Second.—As affording a substantial, often a complete relief to such patients as suffer what the writer has, many times, termed *the iodide of potassium punishment;*

**Sulfonal*, as treated by the writer in a portion of his paper published in the July issue of the *New England Medical Monthly* affords so apposite an illustration of the main points at issue, that he would apologize for thus quoting himself.

That there is frequent difficulty in directing a course of Hydriodic Acid and securing its regular, repetitive ingestion at the right hour of the day, the physician cannot have failed to recognize who has had somewhat of experience in this way. It is not every patient who can so command his time as to take his medicine t. i. d., and always considerably before sitting down to table; and others, who might do this, and who remember to take their medicine at meal time, will not long remember to receive it, regularly, *at quite an interval before the meal.*

For a disability, often, in the writer's experience, is an object of respect, there is no help except as it may come from an intelligible representation to an intelligent patient. Of one thing I am sure, from long observation; the conference between doctor and patient on this point must always close with the ultimatum: *the remedy must be taken on an empty stomach or it must not be taken at all!* (and there are worthy and intelligent patients who are made all the better for the discovery, by indirection now and then, that their physician does not prescribe primarily for their convenience, but for a purpose quite different). And still, exceptionally, if the dose had been forgotten for the occasion or unavoidably delayed, it may be taken, even so near the approaching meal as by fifteen to ten minutes. If the proper relations exist between doctor and patient, the course of medication, efficiency of the medicine, will not be allowed to suffer prejudice through the neglect of minor instruction and concession like this.*

Physiology of Hydriodic Acid.—So true is it of the more intelligent, scientific study of medical materials which prevails in recent years, that the comprehension of the physiological functions and impression of an important drug is an essential substructure on which to erect in the more practical, clinical realm, that the physiology of a drug may even suggest certain of the more important of its applications in medication. That such is the fact in the present instance will soon appear.

But it will be consistent with the practical purpose of this paper to emphasize but one phenomenon in the physiological action of Hydriodic Acid; and such as is, by necessity, chiefly negative and made apparent by way of contrast. The various iodides, from the inorganic to the organic, are characterized by two prominent conditions of physiological impression; viz., an action which is apt to be unduly emphatic, however moderate may be the dose and brief the time of medication, occasioning a functional disturbance which often steadily increases with each repetition of the remedy; and again the modification wrought by idiosyncrasy, the introduction of complications, perversions, incapable of anticipation or prevention, and which is an extreme development, constitute the substitution of a syndroma of toxic impressions for physiological actions; although the limit of medicinal dosing has not been exceeded. Probably no other familiar remedy is so apt to produce such confusion, bringing perplexity and alarm to the inexperienced physician, and distress to the patient, as a simple, generally harmless inorganic iodide, under circumstances of pronounced perversion, as effected by some hidden, unsuspected force in the individual constitution. A drug

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*Corresponding to the law, which we have sought to establish and illustrate, that the syrup of Hydriodic Acid should always be ingested by an empty stomach, is the very general antithetical law *that all other derivatives of iodine and the metalloid itself are best received by the stomach during or immediately after the repast.* This rule in medication applies to the inorganic iodides, the mineral iodides, the organic iodides; but has especial pertinency and force with the first-named class, given, as the inorganic iodides generally are, continuously and with purpose of alterative or of tonic-alterative impression. It is essential, alike to a mild physiological action and to the procurement of the surest and best medicinal action, that they not only should be received with the food, but, if we may not say digested with the food, at least absorbed and assimilated with it. The superior therapeutic force and efficacy of the remedy, thus appropriated to the wants of the system, has been shown to be procured through the operation of several distinct physiological principles: (which we cannot give here) as by the experimental studies of Duroy, et cet. We do not forget that *the iodides are not the subject* of our discussion; but the present note has the interest of antithesis, and it is believed may serve, although by the very contrast presented, still farther to illuminate a point which it is especially desired to enforce.

Even the massive doses, in free dilution, of the neurologists, one drachm or less of sodic or potassic iodide, are sometimes comfortably received by a stomach occupied with food; and I have the strong impression that my friend, Dr. Seguin, prefers such status for this medication.

is every day recognized and acted upon, that remedies are best ingested while there is food in the stomach, i. e., during the meal or soon after.*

On the other hand it is a *universal law*, if we mistake not, and one of opposite direction, which governs the exhibition of the medicine of present study, viz., *the syrup of Hydriodic Acid must always be presented to an empty stomach*; or as we express the condition to the patient; repeating the medicine two or three times each day, you should always take it *a half hour*, as nearly as possible, *before each meal.* We insist that this law is universal, as so established by repeated clinical evidence through the years; evidence which was personal with ourselves and that which has been communicated by other observers.

The principles, physiological and chemical, both, on which such regulation rests, can only require assertion: Hydriodic Acid, in whatever medicinal form, is an agent of frail chemical constitution: (and this frailty, which is inevitable, which pertains to the chemical nature of the body,—before remarked of it as a pharmaceutical preparation—follows it from the shop of the chemist to the closet and stomach of the patient.) Easily decomposed, on exposure to any chemical disturbance, *it must always enter a stomach which is empty of food and which is, therefore, of neutral reaction.* If the stomach receiving it be occupied with food and the digestive process, the remedy promptly ceases to be a remedy, assumes a modified form of analogy to the discolored, turbid, pharmaceutical preparation, of which we have taken previous note, becomes a local irritant and if it be absorbed, a toxic also; but with this difference, that a chemical disintergration, which occurs in the bottle (before ingestion of the remedy,) is more innocent for the patient than that taking place in the stomach.†

In conclusion, we state our belief, that a neglect to recognize and obey this law which should govern the administration of Hydriodic Acid is the most frequent and prolific cause of negative result, disappointment, disastrous results in its use.

Let it be objected that the principles concerned with the ingestion of such a remedy are obvious, are such as to justify the slight or omission experienced at the hands of many teachers and hardly to excuse the space at present devoted to their illustration, and that it may safely be left to the rational deduction, *a priori* observation of the physician. This might all be, were the medical profession, generally, a body of reasoning, observing, thinking men (and the author would enter a prompt *caveat* and disclaimer of odium conveyed in this remark, having confessed, for himself, that it was through *a posteriori* evidence, as afforded by his patient's stomachs when maltreated, that he first learned a correct practice, based upon the *universal law* enunciated.)

But all physicians have not been set right through such observation, even. In a word then, the pharmacist has learned during recent years, how to prepare and dispense the remedy; it is presumably trustworthy and efficient as it comes to us from his hands. But, before such remedy can accomplish all of which it is capable and possess the uniform, universal confidence of the profession, the physician must learn how to use it.

*It is, practically, a universal rule that *iron as a hæmatinic* should thus be taken; the physiology and therapeutics of the remedy are perhaps equally involved in obedience to such rule. I believe that there is but one morbid state, presenting exception to an otherwise universal law, that *arsenic* taken in course, must be received with the food.

Fonssagrieves, the ingenious author of many valuable works on practical therapeutics, strangely enough seldom given [or given but in small part] to the English reader, remarks of cathartic medication chiefly as concerns the ingestion of the aperient or laxative, that the best results in many ways are secured by taking such remedy at meal-time *naively adding*, "*It is the English method and it is good*," intimating thereby that the French have not, as yet, learned the better way.

I am sure that one who should practice along this line, having previously practiced indifferently or otherwise, will be gratified at the modified results which will appear in his practice; and none the less there is the not infrequent occasion where it is equally important for the cathartic material to be received by an empty stomach.

†It may become exceptionally, *an essential and an active toxic. The iodates* are essentially toxic salts, thereby presenting a marked contrast with the iodides. Now if iodine be precipitated in the stomach, in a form of a minutest subdivision, at a time when the chemico-vital energies of digestion are in full operation, it may well be that conditions shall obtain calculated to invite transformation into an iodate. Against such peril it would seem that no assurance can be given, however improbable its occurrence may be, however infrequent.

give attention to the source from which this remedy is procured. It may be just that pharmacist, who has not the skill to make the preparation himself, who will often prove ignorant or indifferent as to the honesty or skill of the manufacturer from whom he buys.

Again, should the essential, initial care have been properly exercised, it is equally imperative that, the medicine once procured, a complete and intelligent understanding should exist between physician and patient, as to the treatment it shall receive, while in the hands of the latter, with purpose to ensure its continued integrity. A lack of proper attention given to the points thus made, (and to another soon to be presented, and which, if possible, is of greater moment), is chiefly responsible for partial result, positive failure, in the use of the syrup, and, too often, for unmistakable injury attending upon its use.

The *ingestion* of the remedy demands the strict attention of the prescriber; and in this particular, with the many results involved, the latter is alone responsible, as, upon details just presented, he shares responsibility, in varying degree, with the druggist. But, above all, it is a determination of *the hour with reference to eating*, when the medicine shall be taken, which is of importance, *of capital importance*; and, still here again, error, ignorance, indifference will not alone bring failure in medication, but, often, deleterious results also.

Now unless the writer is strangely misinformed, the standard books and teachers seldom give emphasis to this capital condition, as we conceive it to be, in the use of the remedy; too often, pass it by without notice. Many medicines can afford such slight and dismissal; syrup of Hydriodic Acid cannot afford it. In all that directly concerns the ingestion of this remedy, there must be conscientious instruction on the part of the physician, intelligent co-operation between the physician and patient, strict obedience of the latter to the former, or the medicine had much better never been prescribed.

Just here, and as pertinent to the immediate subject, a somewhat personal remark may be excused; first, in the writer's capacity as a writer, again in his capacity as a practitioner. As said heretofore, if he is informed upon the subject of present consideration, if his estimate of a material which has been an object of use, study, and instruction on his part for many years, is correct, we have now reached that stage of the discussion which, with purpose of all possible brevity, demands in its treatment a concession of whatever space may be required, even although as compensation, some other departments are passed rapidly and curtly in review.

As a practitioner, he is free to confess that, in early experience with the remedy, it was prescribed for some time and with repetitions before it began to be realized that there had been wrong, misconception, neglect, upon a condition more essential to the success of the remedy and the help of the patient than any other, except the remedy's initial and continuous integrity. And this condition, which concerns the hour of the day, because of the implied status of the patient's stomach, imperatively governing the exhibition of Hydriodic Acid, was first taught, not by the consultant, by standard books of reference, but by the complaints rendered by the stomachs of those under treatment. After a certain number had reported disturbances occasioned by the remedy, gastric distress, etc.; after the remedy in consequence, had been more than once suspended, condemned, abandoned, the secret of disappointment and disaster was revealed.

A universal rule in medication, seldom as such is met with, is a measure of actual help to the practitioner, who rightly apprehends it; to the specialists in therapeutics, it affords a satisfaction which may partly come from the offset it suggests to conditions continually reminding him how far removed from an exact art is the art to which he is devoted. That universal laws exist is sure, as sure as that these laws are very few. When a law that is really absolute and without exception presents, particularly if it concers practical therapeutics, it is certain to have a value and authority which we cannot well disregard. It is a common rule, and yet of frequent exception, a rule which

SYRUP OF HYDRIODIC ACID—HOW AND WHEN TO USE IT.

By HENRY M. FIELD, M. D.,

Professor of Therapeutics, Dartmouth Medical College, Etc.

(Reprinted from the *New England Medical Monthly*, October, 1890.)

Hydriodic Acid is a compound which in chemical symbol is indicated by the formula HI and in chemical composition consists almost entirely of iodine. This paradox of constitution, pertains to the fact that the equivalent of iodine is 127, the equivalent of hydrogen less than 1; hence a little over 99 p. c. of Hydriodic Acid is iodine. The syrup of this acid, the only pharmaceutical form in which it is used, was somewhat in use prior to 1870; but in that year was stricken from the U. S. P. on account of the uneven and imperfect methods by which it was prepared, and also its frequent instability. For several years thereafter it remained unemployed and indeed had become nearly obsolete, when, through the successful efforts of a New York chemist, it was introduced to the medical profession, being received into the general favor which it has since enjoyed. And, indeed, it was no small service which R. W. Gardner thereby rendered to practical therapeutics; the syrup of Hydriodic Acid as prepared by his method, and restored to pharmacy by his enterprise, has held its ground ever since such introduction, being of uniform strength, of stable constitution,—at least when the necessary conditions of its preservation are met,—and of agreeable taste.

The original gift and service of Mr. Gardner should always be kept in mind and receive due and grateful recognition on all proper occasions. No less than this the writer feels bound to say; and to add that there must be many physicians and druggists throughout the country, who, like himself, will always hold in pleasant memory an interview or communication of years ago, in which the information sought was freely and effectively afforded; and in a way, also, which bespoke the gentleman as well as practical scientist.

A magistral syrup of Hydriodic Acid is estimated to represent 6½ grains of iodine in each ounce, is of the consistence of lemon syrup, of agreeable sub-acid taste, of pale straw color and must be absolutely free from insoluble particles. Moreover, it may be regarded a stable compound, so long as essential conditions, both as to its keeping and use, are intelligently observed. It must not be exposed to a strong light, or left long exposed to the air; avoidance of either extreme of temperature is equally imperative. Approach to either 32° or 100° Fahr., not alone endangers the loss of medicinal properties, but makes liable a change in chemical construction, through which a positively deleterious action may result.

As already said, a good specimen of the syrup will be of a fixed, uniform color and will present translucency,—be absolutely free from insoluble particles,—and this, whether held in suspension or precipitated. A faulty preparation,—faulty at first because not made right, or afterwards because not kept as it should be,—will most often present departure from the standard in two corresponding particulars: will be *reddish or reddish-brown in color*, and to use a common word will be *turbid*. Such specimen cannot fail alone to exert the properties for which the remedy is prescribed; there is danger lest it further exert the properties of an irritant and toxic. A syrup presenting signs of reddish color and turbidity, also presents evidence of chemical decomposition, and among the products of decomposition, iodine in precipitated form.

The Dispensing, Care and Preservation, Ingestion, Etc., of Hydriodic Acid.—However it may be with his usual prescriptions, the physician should always

SYRUP HYDRIODIC ACID IN SMALL-POX.

By W. H. BENTLEY, M. D., LL. D., Woodstock, Ky.

(Reprinted from the *Medical Summary*, June, 1891.)

Prior to the war of the rebellion my experience in treating small-pox had been comparatively limited. Many of my cases were treated in a hospital in which I was interne. I was then young, and, like many young men thus situated, I inclined to shift the responsibility to the shoulders of my superiors, and to let them do most of the thinking, if, indeed, any thinking was done.

During most of the war my location and itinerant practice, in a city at all times the headquarters of an army of one or the other of the belligerants, brought me each winter into immediate contact with many cases of this loathsome disease.

The responsibility was my own, and if any thinking was done I had to do it. The text books to which I then had access recommended cold food and drinks. I soon become to distrust and then to abandon this course of practice. With the exception of an occasional cathartic, or a restrainant of diarrhœa, I gave luke-warm infusions of rattle-weed (cimicifuga, or macrotys racemosa) and mountain dittany (cunilla mariana).

This course was followed in the earlier stages, and indeed, until the complete establishment of the postular period.

I observed that after this period most of the mortality in my cases occurred. I then, as I do yet, ascribe the fatality at this and subsequent periods of the disease to the absorption of pus.

I sought to remedy this by giving alteratives, mostly the iodide of potash. This was the only iodide then and there attainable.

I found this often entirely rejected by the stomach, so that its discontinuance was necessary. Among this class of patients (those who could not tolerate the iodide of potash) were nearly all my fatal cases.

Since the close of the war there have been many outbreaks of small-pox in sections where my services were sought, for many physicians, through fear or from other causes, decline to treat the disease altogether.

I have frequently gone to a small-pox stricken section fifteen and even twenty-five miles distant, and remained until by vaccination and other means the further spread of the disease was fully controlled.

I continued the use of iodides—mostly the iodide of sodium, as being the best borne—after the close of the war until 1880.

I treated no case of small-pox from 1880 until December 12, 1890. Through the remaining part of that month I had in charge, all told, thirty-one cases. These cases were all in one neighborhood and about twenty miles distant, most of them, at least, in an adjoining county. Most of the cases were comparatively mild, there being three of them of the confluent variety.

From the commencement of my use of the syrup of Hydriodic Acid, which I think was in 1884, I had thought of it in the suppurative and subsequent stages of small-pox. Its acceptability to the most delicate stomach, together with its superior alterative qualities, pointed to it as the remedy.

The evening of my arrival at the stricken village I visited the druggist to induce him to order the above-named syrup. He was an old friend and had been induced by my earliest published articles on syrup of Hydriodic Acid to give it a trial, he being also a practicing physician.

He had used it largely and in different diseases, and always, he thought, with marked benefit. I found him with a large stock of Gardner's syrup on hand. I prescribed it in the suppurative and subsequent stages up to the complete desquamation in nearly all the cases, I thought, with the happiest results. None of the cases lingered or made tardy recoveries. All got well. Experience has given me so much confidence in this course of treatment that I do not hesitate to lay it before the profession.

I returned next day at noon. The tongue had greatly cleared of its furred appearance. The pulse had lost its rigid feel, and beat softly at 100. I did not take the temperature. The cough was not so harassing, and the sputum was rust-colored. Complained of little pain.

Continued medicine at intervals of four hours. Saw him 14th at 3 o'clock p. m.; all the symptoms had improved, but there was marked exacerbation of fever at night. Directed medicine continued at intervals of four hours, each dose followed in two hours by 5 grs. sulphate quinine in absence of fever.

I did not see the case again, but the patient made a rapid and complete recovery.

R. W. Gardner, of New York, the originator of this invaluable preparation, cautions against compounding the syrup of Hydriodic Acid with other drugs; but I have given many other preparations in usual doses from one and a half to two hours after the syrup, and with the happiest results, and I state this fact here for the benefit of other physicians wishing to use this syrup.

I have used the syrup of Hydriodic Acid in twenty-three cases of acute pneumonia, and always with good results. I have not the space to detail the cases.

In remittent and interimittent fevers, given in dessertspoonful doses every four hours, and followed two hours later by full doses of quinine, I have had unvarying success, and I have pursued this treatment in a number of cases.

In acute rheumatism I have never found any other drug its equal.

I kept notes of nineteen cases of acute rheumatism, treated with syrup of Hydriodic Acid—all made rapid recoveries.

One day I was sent for to see a case, supposed to be acute rheumatism. I was ill and confined to my room; I gave the messenger one pound syrup Hydriodic Acid. In a few days he returned, saying that the patient was no better. I went with him, and found that my patient had gout.

I have tried this preparation in about four cases of gout. The results have not been satisfactory.

In both acute and chronic bronchitis I consider the syrup of Hydriodic Acid of the greatest value. It is likewise of the greatest value in convalescence from measles, pneumonia and bronchitis.

It is never necessary in the administration of this remedy to wait for a fever to subside. I have thoroughly tested it in this respect.

I give the following case for what it is worth:

Capt. A., who had been a widower, and recently married to a blooming young lady of twenty, came to me in great consternation. He lived in another county, some thirty miles distant, but he brought his once lovely wife, lovely alas, no longer, for an inveterate psoriasis had seized her entire person, except the scalp, and Job himself could not have presented a more loathsome appearance. To make bad worse, several physicians had failed in the last year.

I prescribed iodide and carb. potash, Fowler's sol. arsenic and fl. ext. berberis aquifolium internally; externally, a mild ointment of oleate mercury.

He was back in a month—case no better. I then prescribed Donovan's sol. ars. internally, chrysophanic acid ointment externally; still it was "no go." He reappeared. I then prescribed syrup Hydriodic Acid, one pound.

Sig. A dessertspoonful before each meal and at bedtime; locally, a mild oleate of zinc ointment.

This did the work, leaving the skin in a perfectly natural condition.

At the expiration of that time, the ulcerated surface was about the size of a twenty-five cent coin, and the patient in all other respects well. She then returned to her home in Kansas, and I lost sight of the case. [I have recently, Nov. 2, 1885, received a letter from this patient, stating that she is entirely well.]

I commenced this case April 15, 1884. May 20, 1884, prescribed syrup of Hydriodic Acid for Mr. B., a well-to-do farmer, age 54, who had been suffering with a distressing cough from chronic bronchitis for the past twenty-two years, the result of a relapse from measles. During the last ten years a gradually increasing asthma had complicated the case. Most of the time he had been under the care of some physician or quack.

The Pierces, Van Meters, and other rascals of that ilk, had during the last few years, fleeced him of hundreds of dollars. All had proved unavailing; he had all the time grown gradually worse.

At my visit I regulated his bowels and put him upon syrup of Hydriodic Acid. He began to improve immediately, and by the middle of the ensuing August was apparently well, and still remains so.

July 2, 1884, J. C., applied to me for treatment. He had, for the past eight years, resided in a malarious district of Texas. During the past seven years he had been the victim of chronic intermittent fever; unless when under the influence of quinine or some other potent drug, he had one chill every day, some days two. They would cease for a few days when taking medicine, to resume again as soon as the influence of the medicine had passed away. When examined, his bowels were confined, liver torpid, and spleen greatly enlarged and much indurated. He looked bloodless, and his skin was waxy and of an ashen hue.

I went to work, regulated his bowels, stopped his chill with large doses of dextro-quinine and Hypophosphite of Soda. I then gave him a supply of syrup of Hydriodic Acid and a strong solution of quinine, ten grains to the dose.

I put him on the syrup, two teaspoonful doses three times a day for six days. On the seventh day he got three doses of quinine and no syrup. From the eighth he had his syrup as before, until the next seventh day.

Then the quinine as before, thus alternating until the fifty-sixth day. Then for a month the syrup in diminishing doses till a pint was used, never going below teaspoonful doses. He got well of all his diseases, and so remains at this writing—Feb. 20, 1885, although he has been exposed to much inclement weather since. Syrup of Hydriodic Acid has in my hands proved of the greatest benefit in the scrofulous and cutaneous diseases of children; also in mercuro-syphilitic rheumatism.

ACUTE PNEUMONIA.

By W. H. BENTLEY, M. D., LL. D., Woodstock, Ky.

(Reprinted from the *Medical Summary*, January, 1888.)

November 11, 1885, called at 10 o'clock, a. m., to see J. T., æt. 19 years; found him with badly furred tongue, pulse 150 and full, temperature 103.5°. He complained greatly of pain in right thoracic region, coughed almost incessantly, and raised a large amount of bloody sputa. Auscultation and percussion showed that the entire anterior surface of the right lung was involved. Another physician who had called to warm himself, was present. He told me unhesitatingly that the patient was bound to die.

At 12 o'clock, noon, I administered a dessertspoonful of syrup of Hydriodic Acid, well mixed with 2 f. ʒ of water. I repeated the dose at 1 and 3 o'clock p. m., directing a similar dose every three hours during my absence.

I can truly say that about every remedy suggested and recommended from the time that Bostock first wrote on the subject, 1819, had been tried, but nothing has ever given the relief and sense of comfort that this did.

One word more and I am done; the form of administration was that of the syrup—a teaspoonful every hour or two until relief.

If necessary, double the dose. The syrup, as prepared by Mr. Gardner—was the special brand, though where that is not accessible, I imagine the regular acid of the dispensatory on a lump of sugar, 3 to 5 drops, would be equally as efficacious. The mustard leaves are applied as soon as the first dose is given.

Since commencing the acid treatment, my brother, Dr. C. P. Judkins, has prescribed it in another case, that of a married lady who suffered intensely with the asthmatic symptoms, with perfect relief, that so far has been continuous, and as in my own patient, bids fair to continue so. The capsules were discontinued when commencing the use of the acid.

GARDNER'S SYRUP HYDRIODIC ACID IN LUPUS, CHRONIC BRONCHITIS, AND CHRONIC MALARIAL POISONING.—"THERAPEUTIC VALUE OF GARDNER'S SYRUP OF HYDRIODIC ACID."

BY W. H. BENTLEY, M. D., LL. D., COLD SPRING, WOODSTOCK P. O., KY.

(Reprinted from the *Medical Summary*, March, 1885.)

After summing up the various therapeutic advantages of iodine, and discussing the acrid and escharotic properties of it in substance, and the disadvantages of the iodides in many cases, from the objectionable character of the base in chemical combination with it, and lastly, of the advantage of Hydriodic Acid, whereby the system might be brought under the influence of iodine without most of the objectionable features spoken of, he says: "But here a new difficulty presented itself, growing out of and dependent upon the instability of the Hydriodic Acid itself, for the pure Hydriodic Acid cannot be preserved in an undeteriorated state through any considerable length of time."

For this reason Hydriodic Acid was dismissed from the U. S. P., in 1870. It remained however, for the chemist R. W. Gardner, of 158 William street, New York, to overcome all difficulties in regard to the unstable character of Hydriodic Acid (which he did in 1878), and to place this valuable therapeutic agent in the hands of the medical profession in an available and convenient form. This he has accomplished in the form of a permanent syrup, in which the acid is thoroughly preserved in its original purity for an indefinite period of time. I have tested its permanency in several ways, and found it stable. * * * * *

Gardner's syrup of Hydriodic Acid resembles lemon syrup in taste, and is therefore easy of administration. It should never be combined with any other drug.

Since March, 1884, I have used the syrup of Hydriodic Acid rather extensively in my practice, and consider it a prompt and efficient alterative.

I used it first in a case of lupus of two years' standing.

It was situated on the anterior aspect of the left leg, midway between the knee and ankle joints, nearly circular in form and a little more than two inches in diameter.

The patient was a nervous little woman, of light complexion, thirty-two years old, and was, at the same time, suffering from both dysmenorrhœa and leucorrhœa. Besides local measures, I prescribed the internal use of the above syrup, at first in drachm doses four times daily. The doses were gradually increased to twice that amount. The improvement was immediate and rapid. I treated the case seven weeks,

Hydriodic Acid, and cannot but think that its use, if more generally known by the profession, would be found to accomplish that which other remedies only tend to palliate."

Chronic Bronchitis.—T. J. Yount, M. D., Lafayette, Ind., in the *New York Medical Record*, Aug. 4, 1893, page 121, writes: "Gardner's syrup of Hydriodic Acid, a non-irritant preparation, has a decided curative effect on this disease. I have used it on myself and many patients, and have experienced almost immediate benefit by the arrest of the profuse secretions and cough. The only objection to it is the strong and pronounced metallic taste which invariably follows its prolonged administration, causing loss of appetite and consequent debility. It should be given in teaspoonful doses three times a day at the commencement. and gradually increased to two or three teaspoonfuls three times a day, well diluted in Burgundy wine or water." * * * *

HAY ASTHMA.

By WILLIAM JUDKINS, M. D.,

Late professor Physiology, etc., Cincinnati College Medicine and Surgery, Cincinnati, O.

(Reprinted from the *New York Medical Record*, Sept. 6, 1884.)

"Hay Asthma—Can it be relieved?"—I feel that I should be sadly derelict of duty did I not give to the profession, and through them to the laity, my successful treatment of this obstinate and distressing complaint. Though only the record of one case, the result is so gratifying to the patient, her family, and myself, that I feel justified in sending these few lines regarding it, in hope of benefiting others. Mrs. ——, aged twenty-eight, married, mother of two children, the youngest four and a half months old, has been subject to annual attack of hay fever for fourteen years, and frequently with complications of a severe character. Last year she suffered an attack of bronchitis, during the latter part of the asthmatic stage, that came near proving fatal. Convalescence slow. The case first came under my charge in 1880. The attack that year was aggravated in a measure by pregnancy. The only thing at that time that gave any relief was "milk punch," in the proportion of whiskey 2 oz.; milk 8 oz. The relief obtained from this was only temporary, when more would be administered; but at no time was intoxication produced, though the remedy was given for several days in succession. In 1881, a reputed "hay fever resort," (Oakland Md.) was tried for a part of the season, but no benefit was derived, the attack being fully as severe as at any previous time. 1882 and 1883 were equally bad, the complication of bronchitis spoken of coming on last year, which almost caused death. This year phophylactic treatment was commenced, some two weeks before her expected attack, of valerianate of zinc, 1 gr., and pill asafœtida co., 2 gr., combined in capsules, one morning and afternoon, as recommended by Dr. Morrell Mackenzie, of London. It disagreed with her stomach, and was discontinued for three days, and then again taken with no bad effect. For five days after her usual time for the appearance of the dreaded affection all was serene.

The night of the 20th inst., difficulty of breathing to a limited extent set in. My attention had been called to a case of bronchial asthma which obtained relief from the use of Hydriodic Acid, and I immediately ordered my patient to commence its use early on the morning of the next day, the 21st. The effect, in conjunction with counter-irritation in the shape of Riggollot's mustard leaves at the wrist-joints, *was simply magical;* breathing became more and more easy as she continued the remedies. A thunder storm came up that night, twelve hours after commencing the medicine, and for half an hour she was somewhat "stuffed up," as she expressed it, but had a good night's rest. Ever since then she has been easy—now a week—but is exercising all precautionary measures against taking cold, for fear of relapse.

28th. Patient has improved greatly. Temperature 100°; joints not so painful.

29th. Improvement continues. Patient got up to-day.

May 4th. He is up and around the wards, and has no pain in his joints. Treatment continued.

5th. Discharged cured.

CASE II. P. M., aged twenty-two years. Has been under treatment in the surgical ward since April 28th, for gluteal abscess. Has had an attack of rheumatism in both wrists and hands, and pain in the chest and back. The pain and swelling was so severe that he could not bear to be touched. Temperature 100°. Ordered salicin, 20 grains, every three hours, and sodii bicarb., one-half drachm, every three hours.

May 30th. No marked improvement, and was transferred to medical wards. Salicin was stopped, and he was given syrup of Hydriodic Acid, two teaspoonfuls every two hours. Temperature 101.6°. Morphine, hypodermically, had to be administered during the night on account of severe pain.

31st. Pain diminished; morphine not required. Temperature 101.2°.

June 1st. Patient slept well without the use of anodynes. Fingers could be moved without pain, but chest was still painful.

2d. Patient comfortable; all pain and inflammation have disappeared. He fed himself for the first time to-day. Temperature 100°.

5th. He was transferred to the surgical ward, and syrup stopped.

8th. Temperature rose to 100.3°, and another attack threatened. He was given the syrup in the same doses. Next day temperature fell to normal. The syrup was continued a week and then gradually diminished and stopped.

Remarks.—The patient had previously had several attacks of rheumatism, each lasting from two to four weeks. He had a mitral regurgitant murmur on admission.

The syrup was tried in a number of sub-acute cases with good results, but was unsuccessful in chronic cases.

I hope that I have thus been able to impress upon the minds of my readers the fact that, by the use of the syrup of Hydriodic Acid in cases of acute inflammatory rheumatism, our results will be far more satisfactory, and our cases less tedious and uncertain.

ASTHMA AND CHRONIC BRONCHITIS.

BY PROF. GERMAIN SEE,

In the translation of a lecture delivered in the "Hospital la Charite," Paris, on "Respiratory Medicaments," under the subject Iodine, occurs the following foot-note by the translator, E. P. Hurd, M. D., Newburyport, Mass.

(Reprinted from the *New York Medical Record*, Jan. 20, 1893, page 58.)

"A very good preparation containing iodine, much employed in this country, and especially commended for its palatableness, is the syrup of Hydriodic Acid. * * * It is sold through all the United States, and is in much repute as a remedy for asthma and for chronic bronchitis. The preparation which is most frequently prescribed in this region, is Gardner's syrup, which is certainly an elegant preparation, and has been given both in spasmodic and bronchial asthma, with very satisfactory results. Two teaspoonfuls is an average dose. Children take this syrup readily. It never irritates the stomach."

Asthma.—John Cooper, M. D., Brooklyn, N. Y., Nov. 14, 1893, writes: "It may be satisfactory for you to know that in the treatment of asthma, (free from heart lesion and purely depending upon spasmodic action of the fibres of the bronchi), much beyond my expectation, a curative effect has resulted from the use of your syrup of

scribed the syrup in two teaspoonful doses, diluted in water (which should always be done); the lotion was also used in this case. My last visit was made on the 28th, when I left him walking about the house.

CASE VII. S. G. S., aged thirty-eight, clerk, was seized on the morning of the 15th of March, 1885. Commenced the use of the syrup on the evening of the same day; he was free of pain and swelling on the 16th and went to his business on the 17th. He has had no return.

CASE VIII. J. C., aged fifty-one, has had chronic rheumatism for more than twenty years. About the beginning of March, 1885, he was seized with a violent pain in right knee, while walking, followed, after a few days, with heat and swelling. The affected knee was two inches larger in circumference than the other; the trouble was looked upon as a sprain for about three weeks, when rheumatism was suspected. Began the use of the syrup in tablespoonful doses in a gill of water; he felt relief after the second dose; treatment was continued every two or three hours until eight ounces of the syrup were taken; which removed all further trouble. No relapse.

CASE IX. John L., aged forty, coachman, was taken down on May 4, 1885; his knees were very much swollen and very painful. He was given the syrup in tablespoonful doses every two hours, and was able to be around the house in four days and a half. He had a relapse on the 24th of the same month, caused by exposure, and was seized with a chill, and again used the syrup and lotion. Advised the syrup to be continued in decreasing doses and at longer intervals for a week or ten days.

CASE. X. J. H., aged forty, conductor. I was sent for on May 29, 1885, and found his right knee and left ankle swollen and very painful. He also complained of pains in his fingers and toes. The syrup was given, in tablespoonful doses, every two hours; the lotion was also used. He was free from pain within forty-eight hours. Dismissed him on the 3d of June without pain or ache.

The following cases were kindly furnished me by my friend, Dr. Conrad Wienges, of this city.

CASE I. August 28, 1883. P. M., engineer, aged forty-nine; sub-acute rheumatism in both knees and ankles. Gave him two teaspoonfuls of syrup of Hydriodic Acid every three hours. Dismissed him September 3d, free from pain or ache. This patient had several attacks previous to this one, but was always confined to the house from four to six weeks.

CASE II. June 16, 1884. Mrs. L., aged thirty-five; sub-acute rheumatism in the chest and right shoulder. Two teaspoonfuls of syrup of Hydriodic Acid every four hours. It relieved the pain entirely in twenty-four hours.

CASE III. March 30, 1883. F. McC., nineteen years old; worker in tobacco factory; acute rheumatism in both knees and ankles. He was ordered two teaspoonfuls of syrup of Hydriodic Acid, every two hours, in wineglass of water. At my next visit, on the 31st, he could flex his knees and move his foot with comparative ease. April 1st, the swelling had vanished, and the patient was sitting up when I called. He was dismissed on the 3d, cured, and resumed his occupation on the 3d of April.

CASE IV. May 7, 1885. G. E. P., thirty years old; deck hand; acute rheumatism affecting the right shoulder and elbow. The pain was excruciating—so much so that one-fourth of a grain of morphia was given to produce temporary relief. He took two teaspoonful doses of Hydriodic Acid every two hours. At my next visit, sixteen hours later, the pain had almost disappeared, and he could move the arm with ease in any direction. On the 9th, he was entirely free from pain, and was dismissed cured on the 11th.

The following cases were kindly furnished me by Dr. Bauman, House Physician at the New Haven Hospital, New Haven, Conn.

CASE 1. M. F. M., Irish, aged twenty-five; single; painter. Was attacked April 24, 1885, with acute rheumatism in the ankles and knees, and on the 25th it extended to his shoulders, elbows and wrists. Entered hospital this day; temperature 103°F. The pain was so severe that the slightest movement caused great distress. No cardiac lesions. Ordered syrup of Hydriodic Acid, one teaspoonful every two hours.

The old method of treatment by the use of bicarbonate of potassium is slow, and its continued use brings about a depraved condition of the system by reducing the amount of fibrin in the blood and destroying the red corpuscles. It also acts as a irritant to the stomach, injuring the mucous membrane and causing loss of appetite. The depraved condition of the blood can be seen in the pale face, pallor of the lips, and enfeebled action of the heart, requiring weeks for the patient to recover from the disease and its treatment. Salicylic acid has had its day and has been found wanting, being replaced by some with oil of gaultheria—salicylic acid in another form.

This acid, from its difficult solubility, allows its chrystals to irritate the throat and stomach, and in some occasions so much vomiting as to render its continued use impossible.

Syrup of Hydriodic Acid is a good remedy in subacute rheumatism also, but is not so prompt in its action as in cases of the acute form.

I have tried it in chronic rheumatism, but cannot say that I have observed any good results. In some cases I use a lotion as follows:

℞ Liq. plumbi subacetatis, ʒ ij.
Tincturæ arnicæ, ℥ ij.
Aquæ, ℥ vj.

M. Sig. Add one part of the solution to three parts of hot water, and apply saturated flannels to the inflamed joints. It usually gives immediate relief. This solution is of a beautiful yellow color when properly prepared.

The following are a few of the numerous cases of successful treatment of inflammatory rheumatism by the use of the syrup of Hydriodic Acid:

CASE I. On December 16, 1880, I was called to see Mary S., aged eight years, who was suffering from a very severe attack of rheumatism. The knees and ankles were very much swollen, and the pain was so excruciating that she could not bear the weight of a sheet to touch her legs. Protected them with a barrel hoop cut in two and crossed. Prescribed syrup of Hydriodic Acid, in teaspoonful doses, every two hours. The pain was subdued within fifteen hours. Continued treatment for about a week. No relapse.

CASE II. Mrs. E. P. R., aged thirty-five years, was seized with a chill on January 9, 1883. Began the use of syrup of Hydriodic Acid on the 10th, and continued the treatment, in three teaspoonful doses, diluted with water, until the 16th, when the patient was dismissed cured.

CASE III. Mrs. C. F. C., aged thirty-nine. I was sent for on March 21, 1883, and found her suffering from acute rheumatism; prescribed the syrup in two teaspoonful doses; continued treatment to the 29th, when I made my last visit, and found my patient dressed, sitting up, and free from pain.

CASE IV. B. E., aged fifty-five, a merchant, has had rheumatism for many years. I attended him with a sub-acute attack on the 13th of January, 1884; left him on the 18th, free of pain. The medicine was given in tablespoonful doses, every two hours, up to this time, when he was ordered to continue its use in smaller doses and at longer intervals for another week. On the 4th of April, 1885, I was called to attend him with a similar attack. Used the syrup. The pain was still severe on the 5th, so I used the lotion to his hand and knee, which gave immediate relief. The last visit was made on the 8th, at which time he was entirely free of pain and swelling.

CASE. V. Mrs. L. A., aged twenty-seven, was taken with a chill, followed with high fever, on the 21st of January, 1885. I was called on the 22nd, and found her suffering with an attack of acute rheumatism, affecting both upper and lower extremities. As usual in such cases, prescribed the syrup in three teaspoonful doses, every two hours, using the lotion as well. She was relieved in thirty-six hours, and was about the house in one week. Ten days after I made my last visit, her husband told me that she had had a relapse from imprudently sitting by an open window. Medicine was repeated, and in four or five days she was again free from pain.

CASE VI. W. C., aged twelve years, of stout build, was seized with rheumatism in knee, ankle and hand. Saw him for the first visit on February 20, 1885. I pre-

ACUTE INFLAMMATORY RHEUMATISM.

By the late JAMES CRAIG, M. D., Jersey City, N. J.

(Reprinted from *New York Medical Record*, April 21, 1883, page 448.)

Before using the remedy shortly to be spoken of, I was in the habit of prescribing bicarbonate of potassa, which, as a rule, gave relief as soon as the urine was rendered alkaline, which required about a week or ten days, and during that time opiates had to be given to relieve pain and produce sleep. I have also prescribed salicylic acid, but cannot say that I have seen any decided benefit from its use.

Syrup of Hydriodic Acid, prepared by Robert W. Gardner, of New York, is the remedy *par excellence* for this painful and troublesome affection.

I have used it for the past two and a half years in bronchitis and scrofula, but its effects have been most prompt in acute inflammatory rheumatism, relieving pain in from twelve to forty-eight hours.

I have been called to see patients suffering from this affection, and found them with high fever, joints swollen, and suffering terribly, and on the following day have been agreeably surprised at their rapid improvement, finding them in a great measure free from pain and fever reduced. Some other cases take a longer time, but I have yet to find one that was not in comfortable condition within forty-eight hours.

The dose I prescribe for *adults* is from two to three teaspoonfuls, every two or three hours, in a wineglass of water, until relieved; afterward I reduce the dose to one teaspoonful, which may be continued for five or six days, at longer intervals.

I was first led to the use of this remedy in prescribing for a patient suffering from bronchitis complicated with rheumatism, its effects being most salutary in the relief of both diseases.

I should state that under this mode of treatment, the heart has been free from complications; the remedy preventing exudation and organization of plastic material. I more frequently use it now in rheumatism than in bronchitis; in fact, I use it in all cases of acute rheumatism, and must say have always been pleased with its results. I have also prescribed it in chronic rheumatism, but with less effect. I hope that other physicians will give it a fair trial, and find it as useful in their hands as it has been in mine.

NOTES OF SIXTEEN CASES OF ACUTE RHEUMATISM.

By JAMES CRAIG, Jersey City, N. J.

(Reprinted from the *New York Medical Journal*, August 8, 1883.)

In an article appearing in the New York *Medical Record*, April 21, 1883, I speak of the manner in which I was led to the use of this syrup in cases of acute inflammatory rheumatism. The object of the present article is not merely to reiterate what is said in that publication, but to emphasize my entire faith in the efficacy of this treatment by the citation of cases of cure, and the statement that I have yet to find a case in which, the syrup being properly used, it has failed to meet my expectations.

Since the publication of my first article this method of treatment has been employed by a number of physicians with success, shortening the duration of the disease, relieving pain, reducing temperature, and in all cases leaving the patient without heart complications, the remedy preventing exudation and organization of plastic material. I order the syrup in from two to three teaspoonful doses, in a wineglass of water, every two hours, lessening the dose as improvement takes place, and continuing the syrup for about a week or ten days after the symptoms have disappeared, to insure recovery and prevent relapse.

Brooklyn, N. Y., consulted me January 17, 1892, for what she believed to be heart disease. She had always been perfectly well up to three months previous, then she had a very severe attack of "La Grippe." Pneumonia arose as a complicationand she came near losing her life. Her convalescence was long and tedious, and as soon as she commenced to move around, she noticed a good deal of palpitation of the heart. Food did not digest well, and when she did eat, the irregular action of the heart was increased, till oftentimes she would be compelled to lie down, which seemed to relieve her. Any unusual exertion, sudden shock, or excitement would produce violent and rapid pulsations. Slept badly; and was so nervous, that, as she expressed it, "she felt like flying out of her skin."

She thought that she had organic disease of the heart. A physician had told her so, and she thought she was liable to die at any time. She was emaciated, and in a miserable condition, generally, unhappy herself, and making every one else unhappy about her.

A careful examination revealed the fact that there was no organic disease of the heart; that the nervousness, and the palpitation were due to a commencing Graves' disease. She had the enlargement of the thyroid gland, exophthalmia, notably of the left eye, and all of the nervous phenomena of commencing exophthalmic goitre.

I regulated the bowels, put her on a plain nourishing diet, gave her sulfonal gr. xxx at bedtime every night and then every other night for a while, to make her sleep.

Administered from eight to ten cells of the galvanic current, placing the positive pole inside the left ear, and the negative over the seventh cervical vertebra, applying the current for twenty minutes daily.

Internally, syrup of Hydriodic Acid [Gardner's] was given, commencing with teaspoonful doses three times a day, gradually increasing the dose till two tablespoonfuls was at one time taken, t. i. d.; then was again reduced to a teaspoonful, when it was stopped at the end of seven months.

The improvement was immediate and rapid. The galvanism was stopped at the end of a month, and for six months she continued to use the syrup of Hydriodic Acid till the 23d of September when I discharged her, perfectly cured.

THE TREATMENT OF ASTHMA.

By J. P. OLIVER, M. D., Boston, Mass.

(Reprinted from *Boston Medical and Surgical Journal*, March 4, 1880.)

In Dr. F. I. Knight's review of Berkart on asthma, he incidentally alludes to the results of my treatment of asthma with large doses of iodide of potassium. In connection with the above, I desire to state that the drug, in doses of five or ten grains, seldom gave relief; but large doses, continued for a long period, gave entire relief in the majority of cases. Some patients however, were unable to take the iodide of potassium even in small doses; in such cases, I used, as a substitute, Hydriodic Acid, and, as Dr. Knight says, 'with surprisingly satisfactory results.' The form I have oftenest used is the syrup of Hydriodic Acid, and that prepared by Robert W. Gardner, of New York, I consider the best; it is agreeable to the taste, and not very likely to be affected by exposure to light and air. It should be given as follows: Begin with small doses, twenty or thirty drops well diluted with water, and taken about half an hour to an hour before meals; if taken after meals, it may disturb the stomach, set up fermentation, and cause colic, acid stomach, and pain in the head; increase the dose gradually, and a tablespoonful dose should not be exceeded. In cases of chronic bronchial catarrh, and in fact in all cases where iodine is indicated, I have found the syrup of Hydriodic Acid of great value.

Later in the season, I propose to send to the *Journal* a report of a large number of cases of asthma treated on the above plan, and with very gratifying results.

At the suggestion of my friend, Dr. F. A. Burrall, of New York, I am using it in a case of obesity, with the result of steady diminution of the amount of fat, without a single disagreeable symptom, or interference with the general health, or the actions of any of the functions of the body. In hay fever it has been used by other observers with good results, but my own experience with its use in this disease has been *nil.*

It is hardly necessary for me to more than say that in all the latest stages and manifestations of syphilis it has yielded its most magnificent results. Pleasant to take rapidly pushed to large doses, I have found the most pronounced and favorable effects. Patients take it readily, and the improvement is so rapid and immediate that they need no urging to continue its use for as long a time as the doctor deems desirable.

My paper has now reached the limits which I prescribed for it, but I cannot resist the temptation of recording briefly three of the most unique cases of my experience with this drug. The one was a man, forty-two years of age, who was a paper box manufacturer, suffering from arsenical poisoning from the inhalation of arsenical dust arising from the glazed paper which he handled and cut. After repeated trials of other remedies, the syrup of Hydriodic Acid made a complete cure inside of a month.

In Danbury, the city in which I now reside, they make large quantities of hats; in fact, it is said that at least one-half of the hats made in the United States are made in that place. To preserve the fur, carrot is used, which is composed largely of mercury; consequently, many of the hatters working in the plank shop suffer from mercurial poisoning, and many from mercurial tremor and paralysis. No remedy has proved of so much value to me as the Hydriodic Acid, always prompt in its effect and reliable in its results. The last case was one of chronic rheumatism in a man thirty-seven years old. He was almost a complete cripple in his hands and feet and had not done a stroke of work in two years. I had exhibited every remedy known to me, including electricity, massage, Turkish baths, colchicum, etc., etc., etc., but until I commenced the use of the Hydriodic Acid no permanent improvement was made. After continuing its use for four months the patient seemed, and was to all appearances entirely well. For fear of relapse, he continued taking it for two months more, in order, as he explained it, "to make assurance doubly sure." I do not believe that this remedy is enough understood for the advantages it possesses over all other forms of iodine nor as thoroughly appreciated as it should be, but of this I am assured, that it will be tolerated by the stomach many times when no other preparation of its class can be retained, and do work that none other will. It is scarcely necessary for me to state that I have never used any other preparation than that of the originator of the syrup, Mr. R. W. Gardner, of New York.

A CASE OF GOITRE CURED BY GALVANISM AND SYRUP OF HYDRIODIC ACID.

By WILLIAM C. WILE, A. M., M. D., LL. D., Danbury Conn.

(Reprinted from the *New England Medical Monthly*, November, 1892.)

Cases of exophthalmic goitre; while not very common, are not infrequently met with by the general practitioner. I do not remember of seeing over eight or nine in a large practice of twenty-three years. A large proportion of the cases, usually met with and usually treated as laid down in the text books, rarely fully recover. So when one meets with a case which has entirely recovered by a course of treatment, it is his duty to make it known to his brother practitioners.

The case which I shall now narrate, is only a prototype of many such cases, and the interest is not in the novelty of the treatment [for it is an old one] but from the fact that it got well inside of eight months, and by simple measures.

Mrs. B., thirty-seven years old; American. Mother of four children; resident of

HYDRIODIC ACID—ITS USES IN GENERAL PRACTICE.

By WM. C. WILE, A. M., M. D., LL. D., Danbury, Conn.

Ex-Vice-President of the American Medical Association, Member of the British Medical Association, Editor of the *New England Medical Monthly, etc., etc.*

Read before the American Medical Association, Cincinnati, 1888.

The difficulties which were in the way of the use of Hydriodic Acid because of its rapid decomposition were considered so insurmountable that it was not until the year 1880, when an unalterable syrup was presented to the profession, that it came into use. Soon after this, in 1880, my attention was attracted to an article by Dr. J. B. Oliver, of Boston, which was published in the *Boston Medical and Surgical Journal* of the issue of March 4th of that year.

Dr. Oliver, in his paper, alluded to the use of syrup of Hydriodic Acid in the treatment of asthma, and, in conclusion, says that Dr. Knight "had surprisingly satisfactory results" from the same remedy. Having under observation at this time a severe case of chronic asthma, complicated with chronic bronchitis, on which I had tried iodide of potassium, which was intolerable to the stomach, I at once put the lady, a woman of forty-nine years, upon the syrup of Hydriodic Acid. The effect was all that could be desired. There was an almost immediate relief from the asthmatic conditions, rapid amelioration of the cough, decreased expectoration, which was very profuse before the exhibition of the remedy. The sputa, which was thick and viscid, became thinner in character, and my patient's general health commenced to improve, and after three months of the use of the syrup of Hydriodic Acid, in increasing doses, till two teaspoonfuls were taken, three times a day, complete recovery took place, and from that time till her death of pneumonia, two years later, had no relapse. The results in this case were *so* satisfactory that ever since it has been my favorite remedy in *all* asthmatic troubles, and though every case has not yielded so promptly and effectually as this one, still I have never administered it in this class of diseases without unmistakable evidences of relief and comfort. In chronic bronchitis of long standing in my hands it has produced most excellent results, and can be given when the iodide of potassium cannot for a moment be tolerated. The cases which seem to derive the most benefit from this remedy belong to that class of long standing bronchitis, when the lung seems about to take on a deeper seated and less tractable form of disease. My attention has been frequently called, in the treatment of chronic bronchitis with Hydriodic Acid, to the fact that small doses, frequently repeated, are of signal service, when larger doses do not seem to accomplish the same results. In fact, from long experience, I would suggest the constant use of the syrup in small doses, fifteen drops, gradually increased a drop a dose, until the point of toleration is reached, in order to get the most satisfactory and lasting results. While practicing at Sandy Hook, Conn., I had the opportunity of observing its action in lead poisoning in a great many cases, lead entering largely into the compound which is mixed with the crude rubber during the process of manufacture. I depended almost entirely on the syrup of Hydriodic Acid for all forms of chronic lead poisoning. In lead paralysis this remedy, combined with keeping the bowels quite free, and the application of the faradic current, were the only means employed, and always with satisfactory and oftentimes surprising results.

Wrist-drop and chronic abdominal pains would yield to the remedy, combined with saline cathartics. In scrofulous diseases, of children especially, does the Hydriodic acid seem to produce most marvelous results. In infantile eczema, enlarged glands, cold abscesses, indolent sores, treated with small doses, gradually increased until it is all that can be borne, will prove a source of great gratification to the patient and gratitude toward the doctor.

stomach is often rebellious at this time, for it has most likely been surfeited with mercury. Many cases drag along under iodine because not enough of it can be borne, and mercurials frequently are not only useless, but at times injurious. Instances such as those related bear admirably large doses of syrup of Hydriodic Acid. Some cases have come under my observation in which the patients were at a standstill, who at once brightened up and rapidly improved under the use of the syrup of Hydriodic Acid. If thought desirable, the biniodide of mercury (the red salt) can be combined with the syrup, but the protiodide cannot be used at the same time, because it (the green salt) would be converted into the former salt, and unless care was taken the unexpected activity of the syrup thus prepared would exceed the prescriber's expectations, and possibly injure the patient. In syphilis the syrup can be pushed, if needed, until the characteristic saturation is evident, or when the metallic taste becomes pronounced, and we know that iodism is near at hand. It is advisable, however, not to carry the administration so far.

In rheumatism the syrup may substitute the alkalies and may cut acute attacks short sooner than the ordinary drugs that are usually prescribed. It is certainly a useful article in chronic muscular rheumatism. It has done good service in my hands in sciatica. It may be administered during acute rheumatic attacks without reference to the fever, and in moderate doses, say a teaspoonful or two every two hours. Of course, it will not act promptly and effectually in all cases, for rheumatism is notoriously fickle as related to curative agents. In bronchial disorders small and frequently repeated doses are better than large ones. It may be administered in this latter affection in from twenty to thirty drops every two hours. The syrup has been recommended in chronic arsenical poisoning, several cures being noted. In lead poisoning it has also been serviceable. In obesity the steady administration of the syrup of Hydriodic Acid with suitable regimen has a very happy effect. We are not too well supplied with agents of repute in this disagreeable complaint. Hence a note on this point in reference to its use in this respect is of utility.

Many skin diseases are benefited by the syrup of Hydriodic Acid. In connection with cod liver oil it is valuable in some varieties of eczema, particularly in children. It is especially efficacious in the form known as scald head, which is often so obstinate and unyielding to many remedies. Scrofulous persons (those predisposed to glandular troubles) receive decided benefit from its use. The red-eyed children, those having recurrent granular lids, with repeated attacks of mild conjunctivitis, derive great relief from syrup of Hydriodic Acid. A case of amyloid liver with fatty heart, in the practice of Dr. F. A. Burrall, of New York, was notably aided by the syrup of Hydriodic Acid, and he endorses it in glandular troubles generally. Dr. Blackwood, of Philadelphia, has employed it largely in his practice, and reports cases of exophthalmic goitre, lumbago and uterine catarrhs which were cured by the syrup. It is desirable that Hydriodic Acid should be given by itself, inasmuch as it is very susceptible to chemical action, combinations with other remedies might act injuriously upon it. Metals and alkalies are incompatibles, so also are oxidizing agents, as for instance, acids, permanganate and chlorate of potassium. These would form iodic acid, which would be highly injurious to the patient. If intolerance becomes apparent, as occurs with all really active medicines after a more or less extended use, the syrup should be dropped for a week or ten days, when most likely the stomach will have recovered its tone and it may again be administered. Unlike many remedies which, when once objected to in this way, are never likely to be good again, the syrup is just as palatable and equally efficient when taken up after a vacation (so to speak) as when first given, which is an important characteristic of this remedy. Although syrup of Hydriodic Acid is used by many practitioners, we call attention to it, believing that a wider knowledge of it is desirable and feeling certain that a careful trial by physicians at large will add to their armamentarium an important remedial agent, as they will learn to appreciate its value as we have, by its employment in a wide circle of disease for many years.

potasssium iodide, three times a day, for weeks at a time. In the use of Hydriodic Acid I have seldom found it necessary to increase the usual dose to get the desired effect. It would seem that iodide of potassium becomes active by being coverted into Hydriodic Acid.

For the past six years, I have had uniformly good results in the use of Hydriodic Acid in bronchitis, and in chronic and sub-acute catarrhal diseases. I have found that it acts as an irritant, and does more harm than good during acute febrile stages. I have also used it in chronic malarial poisoning, and in Graves' disease, and would recommend its use in the place of iodine in goitre and adipose tumors. In a case of the latter, it relieved the dull pain about the tumor and reduced the weight of the body slightly (the patient being very fleshy.)

I have not used Hydriodic Acid in syphilis long enough to give an opinion as to its value in this disease.

The text-books on therapeutics do not even mention Hydriodic Acid, and the *National Dispensatory*, edited by Alfred Stillé, M. D., and John M. Maisch, Ph. D., says: "Pharmaceutically, Hydriodic Acid is a very unsatisfactory preparation." "It possesses no medicinal value."

HYDRIODIC ACID.

By JOHN V. SHOEMAKER, A. M., M. D., PHILADELPHIA, PA.

(Reprinted from the *Medical Bulletin*, August, 1889.)

If any alterative is more in demand than the iodides, it would puzzle therapeutists to agree upon its name. Many obscure deviations from health exist, amounting not only to pronounced disease, which will not give way to simple tonics or to depurants of the purgative order. These maladies are the bane and torment of a busy doctor, and many times he gets them out of his list by the use of iodides. Then again, when well-defined cases of scrofula and syphilis are under our care, the value of a good alterative is pre-eminently a question of moment. Unfortunately, the iodides in large or long-continued doses have a tendency in many instances to inaugurate stomach disorders, and yet the absolute need of the remedy is apparent. What then shall we do? We can have recourse to Hydriodic Acid. For years this agent was officinal in the dispensatory, but it was dropped because of its unstable character, which made it not only unpleasant, but unsafe to administer. For almost ten years the acid was not obtainable, until in 1878, when Mr. R. W. Gardner, of New York, introduced the agent in the form of a syrup, which the best tests have shown to be unalterable by any ordinary exposure in the sick room, unless in hot weather, when, of course, it should be excluded from either extreme light or heat. Sufficient time has now elapsed to demonstrate that the claims made for the syrup are well founded, and that it replaces the salts of soda and potassa in an entirely satisfactory manner. An important addition in the form of the syrup of Hydriodic Acid has therefore been made to current therapeutics. By the use of this syrup we obtain, in a palatable form, iodine in its most effective state. Mr. Gardner has shown that:

* * * * * * * * * *

Its effect upon mucous surfaces is more marked than with other forms of iodine, while it is effective in smaller relative proportions, and when required, it is so free from irritant action that it may be given to the youngest infant. * * *

The syrup of Hydriodic Acid is especially serviceable in asthma, hay fever, acute and chronic rheumatism, chronic bronchitis and in many chronic congestions of the mucous tract. Probably the greatest value to the practitioner of syrup of Hydriodic Acid will come from its employment in syphilis, particularly in the latter stages. The

CLINICAL EXPERIENCES WITH SYRUP OF HYDRIODIC ACID.

A SUBSTITUTE FOR IODIDE OF POTASSIUM.

By W. GILL WYLIE, M. D., New York City.

(Reprinted from the *N. Y. Medical Record*, May 10, 1879.)

Seven years ago, while with my father, at that time practicing in Chester, S. C., I found that he was using Hydriodic Acid in place of iodide of potassium. The case that suggested its use was one of asthma; for many years the patient had suffered from this troublesome affection. Whenever she contracted an ordinary cold, it would extend to the chest and cause at once persistent asthma, which, if left to itself, would last for weeks. A full dose of morphia would relieve the spasmodic and labored respiration, and large doses of iodide of potassium would remove the bronchitis in a short time. Often the iodide would irritate the stomach and seriously interfere with digestion. To get the best effects it was necessary to give from fifteen to twenty-five grains of the iodide, three times a day, Hydriodic Acid was prepared by mixing one drachm of iodide of potassium with ninety grains of tartaric acid, and dissolving in four ounces of water. On trial, it was found that one teaspoonful of this mixture had as much influence on the bronchial surfaces as twenty grains of iodide of potassium, and produced no bad effect whatever on the stomach. The only difficulty was, that the simple solution soon decomposed and set free the iodine; to obviate this it was mixed with a very heavy syrup, and when properly prepared it made a clear solution which could be kept several days without showing much sign of decomposition.

Gaseous Hydriodic Acid (HI) is rapidly and perfectly absorbed by water, but being held by a feeble chemical affinity, the hydrogen soon becomes disengaged, and sets free a corresponding amount of iodine, which, being soluble in Hydriodic Acid, passes into solution, colors it red, and renders it too irritating for internal use.

As 100 parts of Hydriodic Acid consist of 99.22-100 parts of iodine and 78-100 of a part of hydrogen, it will be seen that it is nearly all iodine, and when not decomposed it is entirely non-irritant and pleasantly acid to the taste. To make the syrup it requires care, and most drug shops will get up sufficient decomposition in the mixing to render the solution useless.

Several months ago, I sent for R. W. Gardner, of New York, whose syrups of the Hypophosphites I had used with much satisfaction, and suggested that he would try and prepare a syrup of Hydriodic Acid. He succeded in making a syrup containing forty minims of the dilute acid to the ounce representing 6.66-100 grains of iodine, which corresponds to 8.69-100 grains of potassium iodide, which keeps perfectly. Two teaspoonfuls of syrup is an average dose.

I have had some patients that could not take even very small doses of iodide of potassium, or iodine in any form, without producing severe iodism. Some of these cases gave distinct accounts of active poisoning, others seem to have the idiosyncrasy show itself with the first dose of iodine. Other patients easily bear twenty-five grains

In acute rheumatism, the remedy may be given without regard to the fever, at intervals of two to four hours, in doses varying from a teaspoonful to a tablespoonful, until pain is relieved, which is usually in from twenty-four to forty-eight hours, and then gradually discontinued.

In this acute inflammatory disease it is desirable to obtain its full physiological action in the shortest time; it should therefore, in these cases, be given in doses as large as can be borne, and thus secure by its rapid assimilation the greatest benefit as soon as possible.

In syphilis, the remedy is to be pushed according to the symptoms and toleration of the patient, until the condition is controlled.

As has been said elsewhere the effect of Hydriodic Acid is more prompt and active than that of iodide of potassium and, probably, much smaller relative doses will be found effective, than usually employed when iodide of potassium is used in this disease.

Special attention is requested to the experience of Arthur E. Mink, M. D., St. Louis, Mo., in the treatment of Cerebro-Spinal Syphilis, with Gardner's Syrup of Hydriodic Acid in place of iodide of potassium.

Any form of iodine which is effective in lesions of the brain, due to syphilitic infection, affords a crucial test of its alterative and sorbefacient action.

Dr. Mink has successfully treated fifty-eight cases of the above diseases during the past year, with this preparation as the alterative. See his paper on p. 83.

stitute for potassium iodide in the treatment of asthma, chronic bronchitis, and other diseases in which the use of iodine is indicated."

Myelitis.—Charles K. Mills, M. D., Professer of mental diseases and Medical Jurisprudence, University of Pennsylvania, Neurologist to Philadelphia Hospital, in the "International Clinics," fourth series, page 100-101, says: "One of the best combinations of drugs in the early stages is probably that of the iodides" and further on in the latter stages.

"Now use tonics, as strychnine, and every thing to improve the nutrition of the patient; and alteratives such as syrup of Hydriodic Acid may prove useful."

Purpura, Sclerosis of Liver.—Two cases reported by Dr. J. K. Cantrell, Alton, Mo. "Child two and one-half years old, most successfully treated of any case attended during a twenty years' practice. The case of sclerosis of liver rapidly improving. Had hæmoptysis until almost dead. No hemorrhage since taking the remedy." (Page 69.)

Obesity—Fatty Degeneration of the Heart.—Amyloid Liver.—Dr. F. A. Burrell, New York, mentions a case of enlarged liver, supposed to be amyloid, in which the gland diminished as shown by measurement under this syrup. He considers it a valuable remedy in glandular enlargements, obesity and fatty degeneration of the heart. (Page 61.)

Dosage.—This remedy should usually be given half hour before meals.

No absolute rule can be laid down for dosage, as this must be regulated according to the conditions.

As a general guide it may be said that doses will vary from one-half teaspoonful to one teaspoonful, always diluted with two tablespoonfuls of water.

In hay fever, asthma, chronic bronchitis, catarrhal affections, and where the object is to relieve local inflammatory conditions, it is better to begin with small doses, say half a teaspoonful in water, and gradually increase until the alterative action upon the mucous surfaces has given the desired relief. If iodism is produced, reduce, intermit, or suspend the remedy, and resume its use when the symptoms have subsided.

of Hydriodic Acid. Some cases have come under my observation in which the patients were at a stand still, who at once brightened up and rapidly improved under the use of the syrup of Hydriodic Acid. If thought desirable, the biniodide of mercury, (the red salt) can be combined with the syrup." John V. Shoemaker, A. M., M. D., Phila., Pa. (Page 30.)

This view of the efficacy of Hydriodic Acid in syphilis, is only what would naturally be expected from this admirable form of iodine, as its great assimilability, non-irritant character, and *direct* and *prompt* action as an alterative in other conditions has been proven.

Dr. A. Rose, Lebanon, Ky., says: "I have tested it in all forms of syphilis—primary, secondary, and tertiary. In the latter there are but few manifestations of the disease after having used the remedy. The secondary symptoms are held in abeyance, until it is convenient to administer a few steam and mercury vapor baths; when the further use of the mercurial plaster, and a continued use of Gardner's syrup of Hydriodic Acid, every physician may hopefully and confidently expect the happiest results to follow at once. I have used it in syphilis, when anæmia was marked, when potassium iodide, iodide of iron or mercury in any form could not be tolerated one moment; anæmia disappeared, the continuous headache instantly ceased, sore throat got well at once, all glanular swellings disappeared. The gummata everywhere vanished into thin air, and the irruption was held in statu quo, until I could give a few calomel vapor baths." (Page 55.)

Richard H. Taylor, M. D., Hot Springs, Ark., relates a case where iodide of potassium could not be borne. Cured with not only success, but in a remarkably *short* time. (Page 52.)

In phthisis with syphilitic complications, the paper by Dr. William Porter, of St. Louis, Mo., will be interesting and instructive. (Page 59.)

As an evidence of the wide spread reputation, which syrup of Hydriodic Acid has attained in the medical world, I. Burney Yeo, M. D., F. R. C. P., London, Professor clinical therapeutics, Kings College Hospital, in his "Manual of Medical Treatment or Clinical Therapeutics," vol 1, page 534, says: "The syrup of Hydriodic Acid, made by Gardner, of New York, is largely used in America, as a sub-

Typhoid Fever.—Dr. B. E. Gardner, Atlanta, Ill., (page 66) writes: "Whenever I get a dry, red tongue, or in typhoid fever, I use it, and always get good results."

Eczema.—Dr. F. E. Daniel, Austin, Texas, says: "Gardner's syrup of Hydriodic Acid, has a wide therapeutic range, but its most brilliant powers are brought out in eczema, that protean disease, which so baffles the doctor, and in scrofula." (Page 67.)

Dr. John V. Shoemaker, Philadelphia, Pa., the celebrated authority and author of a text-book on skin diseases, recommends it in eczema, particularly in children. (Page 30.)

Dr. F. R. Garlock, Racine, Wis., strongly recommends it in chronic eczema, not of specific nature; in cases complicated with syphilitic taint, it is all that could be desired, if used simultaneously with usual mercurials. (Page 53.)

Dr. W. C. Wile, A. M., M. D., Danbury, Conn., also recommends it in infantile eczema. (Page 32.)

Lupus.—Dr. W. H. Bentley, Cold Spring, Woodstock, Ky., reports a case of two years' standing, and two inches in diameter, situated on the left leg of a woman, thirty-two years old. At the expiration of seven weeks it was reduced to the size of a twenty-five cent piece. Later she reported herself entirely well. (Page 40.)

Spinal Disease.—Obscure.—The importance of remedies which change the condition of the blood, in chronic diseases, brought on by a depraved or impoverished state of this "living tissue," is frequently overlooked in an attempt to relieve prominent local symptoms by stimulants and tonics, which are not useful as blood makers, or depuratives.

The late eminent specialist, Wm. F. Hutchinson, M. D., of Providence, R. I., relates the history of a case of obscure spinal disease, which will illustrate the remarks made above. (Page 57.)

Syphilis.—"Probably the greatest value to the practitioner of syrup of Hydriodic Acid, will come from its employment in syphilis, particularly in the latter stages. The stomach is often rebellious at this time, for it has most likely been surfeited with mercury. Many cases drag along under iodine, because not enough of it can be borne, and mercurials are frequently, not only useless, but at times injurious. Instances such as those related bear admirably, large doses of syrup

of excellence and purity found in none of the numerous imitations that are found in the shops. In fact, we have found that almost invariably, when failure of beneficial results are reported, that some other manufacturer's product has been dispensed. It is unfair to blame the drug or decry it as worthless, unless a good article has been used. We know Gardner's syrup to be an excellent remedy, and when recommending the preparation we mean the original Gardner's syrup, and not an imitation." (Page 67.)

Not to mention too many of such statements here, the reader is referred to expressions by numerous other physicians, whose opinions on this point are emphatic, and will be found throughout the clinical literature published herewith.

Fibroma.—Dr. H. F. Stowell, Rochester, N. Y., reports: "A case of fibroid tumor in the region of the parotid gland of twenty years' duration.

A perceptible shrinkage occurred during the first two months of treatment by syrup Hydriodic Acid, after which it remained stationary. There was, however, total relief of various unpleasant sensations in the growth, which sometimes amounted to pain. An inveterate *eczema* (life long) entirely disappeared. (Page 58.)

Dr. James A. Williams, New York, reports a fibroid tumor of the breast, size of an orange, in a lady aged 40 years. After three months' treatment with syrup Hydriodic Acid, she had gained 25 pounds in weight and scarcely a trace of the tumor remained.

Another case reported by the same physician, two tumors (variety not stated), one on the neck and one on the side; the one on the neck is all absorbed, the one on the side three-fourths gone; is feeling and looking finely and has gained 15 pounds in weight. (Page 61.)

Dr. James J. Terhune, Brooklyn, N. Y., reports seven cases of uterine fibroids cured by syrup of Hydriodic Acid. (Page 72.)

The late W. S. Todd, M. D., Ridgefield, Conn., reports a case of uterine fibroid treated with complete recovery.

Dr. Weischelbaum, Savannah, Ga., reports a case of fibroid tumor treated with syrup of Hydriodic Acid with good results. (Page 66.)

Dr. W. Gill Wylie, New York, reports a case of adipose tumor, relieving the pain and reducing the weight of the body. (Page 29.)

Clinical experience shows that iodide of potassium in this class of cases has a powerful influence, especially in those of a specific or scrofulous diathesis. This being true, it follows as a matter of course that iodine is the curative agent and the syrup of Hydriodic Acid being the best form of administration, must prove of value to the practitioner who meets with this class of intractable cases. It is suggested that in patients in whom there is a suspicion of either of these taints, that this remedy be given a faithful test.

Strumous, Syphilitic, and Tuberculous Diathesis.—Dr. Thos. H. Manley, New York, at his surgical clinic, Harlem Hospital, says, that syrup of Hydriodic Acid is the ideal way of exhibiting iodine. He always uses it in preference to any other remedy, to tone up the system in persons of strumous, syphilitic or tubercular tendencies, before operations. "Indeed, in most cases, its timely and appropriate employment would obviate the necessity of any sort of surgical interference."

Definite Iodine Strength.—In a preparation of this character, relied upon for important therapeutic effects, it is of the first importance that it shall be uniform in composition, as otherwise invaluable time is lost in the treatment, during which the disease may progress with serious results to the patient. It is also necessary that the remedy shall produce its results with the least disturbance to the system.

The late Dr. William F. Hutchinson, the eminent specialist in nervous diseases, speaking of syrup of Hydriodic Acid, says: "When medicine must be continued indefinitely, as in some cases of sclerosis or neuritis, in small, unvarying quantities it must be in such form as will not disturb digestive organs or become physically disagreeable." After alluding to the unpleasant effects of potassium iodide, in producing violent coryza, hoarseness, sore throat, etc., he says: "Gardner's syrup has changed all that. It is agreeable to the eyes, taste and stomach, non-irritant to mucous membranes." "I find that this preparation is by far the best form of iodine for rapid dosing, as it is pleasant to taste and rarely, if ever, produces coryza."

Dr. F. F. Dickman, Fort Scott, says: "Too much credit cannot be given Mr. Gardner in keeping this preparation up to a standard

Sanatarium, Va., page 49; W. T. Peyton, M. D., Louisville, Ky., page 67; J. W. Daniel, M. D., Houston, Texas, page 64.

Scrofulous Diathesis.—In this connection it is unnecessary to say more than refer to the well known value of iodine as an alterative. As to the practical evidence of the power of this syrup in these cases, the instances are so numerous and results so satisfactory, that I merely refer to papers by J. W. Daniel, M. D., Houston, Texas, page 64; John V. Shoemaker, M. D., Philadelphia, Pa., page 30; Dr. Nicholson, Washington, D. C., page 65; W. C. Wile, A. M., M. D., LL. D., Danbury, Conn., page 32, etc. (Clinical Index.)

Suppurative and Subsequent Stages of Small-Pox.—A convincing proof of the internal antiseptic value of Hydriodic Acid is given in the paper of Dr. W. H. Bentley, Woodstock, Ky., (page 43.) The Doctor used it in the suppurative and subsequent stages up to complete desquamation, in an epidemic, treating thirty-one cases—all made complete and rapid recoveries.

Acute Pneumonia.—Dr. Bentely also reports twenty-three cases of acute pneumonia treated with syrup of Hydriodic Acid "always with good results" (page 41.) See also paper by, J. Stinson Harrison, M. D., Washington, D. C., page 52.

Chronic Pleurisy and Sequelæ of Acute Pleurisy.—Dr. Lewis G. Pedigo, Crockett Springs, Va., gives a history of his own case; he was under treatment by eminent authorities in New York, and was told he would be compelled to winter in the south and leave his practice. But under the action of this syrup, he not only continued his practice, but to the surprise of his physicians and himself, it was found that he had so far recovered, that the advice was reconsidered and he was allowed to stay.

Later, being examined by a careful physician for life insurance, to whom he gave a history of his case, and mapped out the location of the old trouble, he was told after thorough physical examination, that no local evidence of adhesion or other morbid condition could be discovered. (Page 49.)

Specific and Non-Specific Urethritis.—If syrup Hydriodic Acid posseses the antiseptic properties which seem to be demonstrated by the authorities quoted, it would appear to be adapted to the treatment of such infectious and inflammatory conditions as the above.

Dr. W. B. Fletcher, Indianapolis, Ind., reports a very severe case. "Eye-lids could not be closed completely. Pulse, 130 to 140. Breathing difficult." (Page 56.)

Dr. W. Gill Wylie, New York, strongly recommends it in goitre, and chronic malarial poisoning. (Page 29.)

Acute Inflammatory Rheumatism.—This is one of the most important applications of this remedy.

The late Dr. Jas. Craig, of Jersey City first called the attention of the medical profession to its value in this disease, pointing out that under this treatment the heart is free from complications, the remedy preventing the exudation and organization of plastic material.

Under the syrup of Hydriodic Acid the duration of the disease is shortened, relieving pain and reducing temperature in a much shorter time than by other measures. It should be given at once, without regard to the fever, and pushed, that the alterative action be obtained in the least possible time. (Papers by Jas. Craig, M. D., Jersey City, N. J., page 35 to 38.)

W. J. Weischelbaum, M. D., Savannah, Ga., page 66; Lewis G. Pedigo, M. D., Crockett Springs Sanatarium, Va., page 49; W. C. Wile, A. M., M. D., LL. D., Danbury, Conn., page 32; J. W. Daniel, M. D., Houston, Texas, page 64; J. H. Garlock, M. D., Racine, Wis., page 53 and 54, and others. (Clinical Index.)

Chronic Rheumatism.—In the chronic form of the disease the relief will be just as sure, though from the nature of the case, much more time will be required for the remedy to eliminate the waste products which have become permanently located in the organism in an insoluble state, and which are the cause of the condition. It will frequently be found that the resolution of these substances, uric acid and other products of destructive metabolism, which are ever present in this disease, will be accompanied by an exacerbation of pain for a short period, followed by corresponding relief. The fixation of joints and contraction of muscles, will slowly but surely yield to the treatment. The fact that the Hydriodic Acid acts as a diuretic, as well as an alterative gives it a peculiar advantage in this condition. T. J. Yount, M. D., Lafayette, Ind., page 65; Chas. Lengel, M. D., Kansas City, page 63; Lewis G. Pedigo, M. D., Crockett Springs

page 39, and John V. Shoemaker, A. M., M. D., Phila., Pa., page 30, and S. C. Martin, M. D., St. Louis, Mo., page 71.

La Grippe and Sequelæ.—The antiseptic properties of syrup of Hydriodic Acid, are especially useful in this disease, doubtless acting as a germicide upon the spirillæ in the organism, reducing temperature, and preventing, if used in time, the obstinate bronchial cough which accompanies the disease. (Paper by Dr. C. L. Dodge, Kingston, N. Y., page 58.) In the sequelæ from grippe, certain nervous disorders are sure to follow.

Dr. L. A. Bridges, Berlin Mills, N. H., reports his experience in these cases, where everything else failed, complete relief followed the use of this syrup. (Page 53.)

Pulmonary Catarrh, Chronic Accumulations of Serous Fluid.—Dr. Henry M. Field, late professor of therapeutics in Dartmouth Medical College, has written an exhaustive paper upon syrup of Hydriodic Acid. He divides his subject, treating first of its chemical characteristics; second, of dispensing, care and preservation, ingestion, &c.; third, the physiology of its action; and fourth, of its therapeutics, in which he gives high praise to its action in the above complaints. (Page 44.)

Goitre, Exophthalmic.—Syrup of Hydriodic Acid stands at the head of remedies for this affection, and cases are constantly reported of cures of the worst cases.

In the *Reference Hand-Book of the Medical Sciences*, page 765, Allen McLane Hamilton, M. D., Professor of Diseases of the Mind and Nervous System, N. Y. Polyclinic, in an article on goitre, says: "I have used galvanism with good effects, but rely almost entirely upon a little known remedy, Hydriodic Acid, with which I have cured three cases of advanced and serious goitre. This is given in aqueous solution (Gardner) in increasing doses."

Dr. W. C. Wile, of Danbury, Conn., reports a severe case cured by it. (Page 33.)

Dr. J. B. Carver, Fort Scott, Kansas, reports (page 51) two cases, one of which was desperate, the heart's action being so tumultuous that the entire body vibrated, and she could not stand still.

phosis or change, combined with its antiseptic action, upon an organ like the uterus, which is composed almost entirely of elastic muscular tissue, permeated in every direction by a vast net work of blood vessels. It also produces in this organ the same as it does in the kidney, a soothing effect upon the nerves supplying it, through some process which as yet is not capable of explanation. While theoretically it is impossible for the physician to explain the physiological action of many of the most important remedies which he uses in his daily practice, abundant clinical experience, as in this case, goes to prove beyond question its value. You have here either an active or passive congestive condition, according to whether the inflammation is acute, sub-acute, or chronic. The capillaries are more or less gorged with blood. It is a well-known clinical fact that the dilatation of the capillaries produces the pain that accompanies, in a greater or less degree, every form of inflammation. It is also a well-known fact that iodine under these conditions produces a contraction of the capillaries, lessening the tension and reducing pain.

While we do not present this as a positive explanation, still it is very reasonable to suppose that this is its action. Dr. A. Rose, Lebanon, Ky., says: "There is a wide field of usefulness for this preparation that so far has been little dreamed of," referring to his gynæcological experience in the treatment of tubal disease of the ovary, leucorrhœa and dysmenorrhœa. (Page 55.)

Chronic Bronchitis.—Every physician practicing north of Mason and Dixon's line, and many south of it, will acknowledge that the most harassing feature in chronic bronchitis is the pronounced, prolonged and frequent cough, due to the effort of the patient to expel the tough, thick, tenacious, stringy mucus ever present in this disease.

The result of these continued efforts is far out of proportion to the substance raised.

Its clinging character, close to the bronchial walls, while causing constant irritation and desire to cough, forces the patient to great expulsory effort. This almost continuous and violent exercise sooner or later exhausts the patient to such a degree that the general tone is impaired and the healthy standard reduced. It is in reducing this cough and rendering expectoration easy that we find one of the most valuable and pronounced results from the administration of

The other case was that of an old gentleman, who had made an engagement with his oculist for an operation for cataract, and for whom his regular physician had prescribed Gardner's syrup of Hydriodic Acid for other troubles; he, also, was much surprised to observe a marked improvement in his sight; this, in his case, could not be attributed to any other cause than the syrup, as he had not taken any other medicine, and the oculist had not yet treated him. The operation had been postponed.

Later reports from this case are to the effect that the cataract has not progressed, that the operation has not yet been found necessary, though the sight is not restored. Still there has been improvement. The case being far advanced and the patient about eighty years of age, at the time the treatment was commenced, and the fact that some improvement has been observed, instead of progress in the cataract is favorable to the action of the remedy.

It would naturally be inferred from the history of that case that the cataract would be completely dissolved if treated in the incipient stage. Thus it will be noted, it makes an advance in the therapeutics of this intractable malady. In confirmation, Dr. D. C. DeWolfe, one of the visiting surgeons of the Manhattan Eye and Ear Hospital, New York city, reports two cases of traumatic cataract, with most marked improvement when under the influence of the syrup of Hydriodic Acid.

While the final result in these two cases has not yet fully developed, the influence of this remedy has shown such marked progress that it naturally leads to the conclusion that it is an advance on former methods. The doctor promises to report these cases in extenso, as soon as the permanent results are obtained.

Hydriodic Acid being a powerful antiseptic and resolvent, is a special stimulant to the activity of the secretory system of glands.

It favors rapid elimination of debris. The uric acid diathesis is an essentially septic condition, not only in the kidneys and appendages, but throughout the entire organism.

An efficient internal antiseptic which will act without producing irritant or toxic effects has long been desired.

Iodine stands at the head of alteratives, and as a result of the persistent administration of this remedy you get tissue metamor-

Uric Acid Diathesis.—Dr. Ferdinand King, of New York city, reports a case of uric acid diathesis, (stone) entirely cured by Gardner's syrup of Hydriodic Acid.

On the seventh of December, 1893, Dr. King writes as follows: "I prescribed your syrup of Hydriodic Acid in a case of chronic nephritis five days ago, and the patient reported to-day. 'All symptoms have disappeared.' This convinces me that it is the remedy, par excellence, for diseases of the kidneys caused by excess of uric acid. I want the profession to know what syrup of Hydriodic Acid will do in kidney troubles. A trial in these cases will convince the most skeptical."

Dr. W. C. Wile, Danbury, Conn., calls attention to the value of syrup of Hydriodic Acid in the kidney pain which accompanies pyelitis and renal colic. This pain will be recognized as being more or less severe, quite constant, aggravating and sleep-destroying, particularly after active exertion. It was prescribed for the doctor, by L. Bolton Bangs, M. D., the eminent authority on genito-urinary diseases, of New York. Dr. Wile's paper will be found on page 73.

Pyelitis and Cystitis.—In *Pyelitis and Cystitis* this remedy has evidently a grand future before it. A case reported by Dr. W. B. Fletcher, of Indianapolis, Ind., is truly remarkable, resulting in a perfect cure of both conditions.

The case was one of ten years' standing. Dr. Fletcher's paper will be found on page 70. (See also case of chronic cystitis treated by Dr. J. M. Blakesby, Germantown, Ky., page 66.)

Cataract.—An elderly lady had been operated upon for cataract. Both eyes affected, but one, only, operated upon; the sight was still quite obscure. She had at this time an attack of chronic bronchitis, to which she was subject, for which she was advised to take Gardner's syrup of Hydriodic Acid. Shortly after commencing its use she was surprised to find that her eyesight was rapidly improving; this improvement continued and remained permanent. The oculist had arranged for a second operation, (needling,) but found her condition such that it was unnecessary. Doubtless the operation, in this case, had much to do with the improvement, but the fact that a sudden change for the better occurred upon the use of the Hydriodic Acid syrup, and that a subsequent operation became unnecessary is strong proof of its utility in causing absorption of the cataract.

Acting upon the suggestion of Dr. Wylie, after much experiment, the present Gardner's syrup of Hydriodic Acid, was perfected and put on the market, and the result of its use by him appeared in a paper by Dr. W. Gill Wylie, April, 1879. (Page 29.)

It has been demonstrated beyond peradventure to the minds of some of our ablest practitioners, that Gardner's syrup of Hydriodic Acid is the ideal antiseptic of the *genito-urinary tract.* This statement can be easily verified by you, by testing it in the very next case of pyelitis or chronic cystitis among the many that constantly besiege you for relief. There are probably few sufferers who pass such wretched lives as those who are continuously tormented with vesical irritation, and any remedy that will afford relief and permanently benefit the condition, will be hailed as a boon by physicians and patients alike.

Prof. J. H. Lenon, M. D., Little Rock, Ark., January, 1894, mentions three cases of enlarged prostate gland, treated with syrup of Hydriodic Acid, with satisfactory results.

A case of enlarged prostate gland, in an old gentleman over eighty years of age, has been reported by Dr. John W. Williamson, of Boydton, Va., January, 1894. He writes: "When the syrup was first given, about two months ago, the patient was compelled to void his urine every two or three hours, and then with difficulty. He could not retain it without suffering much pain about the neck of the bladder and prostate. Now he voids not oftener than every six to eight hours, and could retain it longer, if prudent to do so, without pain. The stream is more normal, and there is much less difficulty in micturition. The absence of pain on retention indicates less irritability, and the stream shows less enlargement or hypertrophy of the gland. There was thought to be a complication of slight subacute cystitis."

In commenting on the effects of this remedy, Dr. Williamson continues: "It must be a most valuable reconstructive and alterative tonic for the nervous system, and therefore has much influence on the various secretions and organic functions. It keeps the bowels perfectly regular and normal in action, improves appetite and digestion, and, indeed, general improvement of the whole system."

the morbid state corrected. It produces no depression, indigestion, nor irritation. It is indicated whenever iodine is required for internal use.

Hydriodic Acid possesses all the antiseptic properties of iodine, all its alterative action. Its use as an internal antiseptic is one of its most remarkable applications. Being absorbed so promptly that it is detected in the urine in ten minutes after administration upon an empty stomach, having in this short time passed through the circulation, it will at once be seen that as an internal antiseptic it must be invaluable. No other form of iodine is so freely tolerated, hence the antiseptic action of iodine as an internal remedy, has not been heretofore available. All diseases of an infectious character, and all septicæmic conditions, cannot fail of improvement under this remedy. Being non-irritant and tolerated to the point of saturation of the system, it promises to become the ideal internal antiseptic that the profession has been so long searching for.

In forming an estimate of the therapeutic value of Hydriodic Acid, it should be borne in mind that it differs materially from iodide of potassium in its chemical composition; inferences from the observed effects of the potassium salt, its relative strength in iodine, and even its therapeutic action, must, consequently, be modified by a consideration of the difference in chemical composition, and hence, in therapeutic action.

The therapeutics of Hydriodic Acid were practically unknown until 1878, (excepting Dr. Wylie's experience), as no *permanent* form of it was available. Clinical experience since then has demonstrated that it is much more effective than potassium iodide, more easily and pleasantly absorbed, and is capable of producing results, and being used in cases impossible with iodide of potassium.

Small doses in syphilis, according to the experience of many physicians, produce such desirable results that it is reasonable to conclude that Hydriodic Acid, because of its different chemical form, its greater activity and more assimilative character, is much more efficient, and capable of producing, in small doses, and with no disturbance to the system, all the results which have heretofore required heroic doses of potassium iodide, with the inevitable production of the unpleasant symptoms usual in such cases.

namely, in those chemical combinations in which the iodine retains its irritant and caustic character.

The most frequently employed form is that of iodide of potassium, a combination of two irritant substances, iodine and potassium.

The irritant action of iodine is not at all modified by its combination with potassium, but, on the contrary, is rendered more irritant, by the added acridity of the base.

Lugol's solution contains free iodine; iodide of iron contains iodine in an irritant condition, but this is not usually noted, because of the infinitesimal proportion contained in the dose; hence iodide of iron is a better means of administering iron than iodine. Iodide of sodium is only less of an evil than iodide of potassium, as both elements retain their caustic properties. Causticity and irritation are not the only objections to iodides of potassium and sodium; these bases combine with and neutralize the hydrochloric acid of the gastric juice, which being necessary to digestion, this process is interrupted, and the appetite fails, producing depression and loss of nutrition, in addition to the constitutional difficulty for which the iodine is prescribed. The longer iodide of potassium is continued, the worse these effects become, until in many cases, the remedy must be discontinued to allow the patient to recover from the condition caused by the remedy.

The advantages of Hydriodic Acid (iodide of hydrogen) as a means of administering iodine, need merely to be stated to be enthusiastically endorsed.

Natural secretions are aqueous; water consists of hydrogen and oxygen; hydrogen is therefore a natural element and component of the liquids of the body, the solvent of substances absorbed and eliminated. Hydrogen is, therefore, a natural base and superior to all others for combination with substances designed for assimilation.

Iodide of Hydrogen (Hydriodic Acid) is non-irritant, has an acid reaction and consequently does not interfere with digestion, is more active than iodide of potassium, is as palatable as lemon syrup, may be given freely to delicate women and young children and may be continuously used, without intermission, (except in cases where iodism occurs), until the full effects of the iodine are produced, and

Administration of Iodine.

GARDNER'S SYRUP OF HYDRIODIC ACID.

Iodide of Hydrogen. Non-Irritant Iodine.

Gardner's Syrup of Hydriodic Acid was the first permanent preparation of this remedy ever prepared. It was introduced in 1878. The experience of the profession in the use of this preparation has shown such marvelous results since its first introduction that Hydriodic Acid has become famous. The reputation of Hydriodic Acid has been built up by the use of Gardner's Syrup. Nearly the entire literature published in the medical press, by the most eminent of the medical profession, upon the therapy of Hydriodic Acid has resulted from the successful use of Gardner's Syrup.

Naturally, countless imitations have appeared upon the market, all claiming to be "just as good," but the experience of the profession has shown that this is not the case; in fact, the use of these imitations has so far disappointed the profession that many physicians, imposed upon by unprincipled druggists, by substituting these imitations when "Gardner's" has been designated, have entirely given up the use of Syrup of Hydriodic Acid in consequence of failure in treatment, and being under the impression that they were administering "Gardner's" Syrup, have discredited the writer and his statements.

Syrup of Hydriodic Acid (Gardner) is a clear, colorless, or very slightly yellowish tinted Syrup, of a pleasant taste, reminding one of lemon syrup.

It contains 1.28 per cent. of H. I. Hydrogen Iodide consists of 99.22–100 parts of Iodine and 78–100 of one part Hydrogen.

Iodine, probably the best alterative of the *materia medica*, strange to say has been heretofore administered in its least available forms,

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Syrup. In some cases these imitators appropriated the published papers of those physicians who had written of their experience with Gardner's Syrup, and omitting all allusion to the writer's name, filling in such omitted portions with asterisks, used these stolen papers for wrappers, which were enclosed around their imitations and sent to physicians.

Gardner's Syrup of Hydriodic Acid is put up in bottles containing 16 ounces, 8 ounces and 4 ounces, that those who wish to be assured that their patients are obtaining "Gardner's" preparation, may prescribe original bottles.

Every bottle of Gardner's preparations has a strip label over the cork, bearing his fac-simile signature: this is sealed to the lip of the bottle by a monogram seal in wax (R. W. G.) and enables every purchaser to identify it as "Gardner's", as the label and monogram cannot be removed without destruction to both.

During the extreme hot weather of summer, Syrup of Hydriodic Acid is occasionally decomposed.

This would not occur if it could be kept *cold* and corked. In such cases the manufacturer requests that the druggist *write*, informing him of the *exact amount*, and he will see that he *suffers no loss.*

Syrup of Hydriodic Acid is *good*, unless it has acquired an *orange* tint or darker. A light yellow is *not* a sign of decomposition.

In conclusion, the undersigned wishes to call the attention of the profession to the fact that in a countless number of cases, where they designate "Gardner's" preparations, some other is dispensed by unprincipled druggists.

If the undersigned has succeeded in improving upon the ordinary preparations of the remedies mentioned above, and the physician wishes to avail himself of any such advantage, it is evident that these preparations must be dispensed when prescribed.

The only way to prevent this evil of substitution lies with the physician himself.

There is no other way than to designate "Gardner's" by name, and to direct the patient to such apothecaries as are known by the prescriber to be honest and reliable, and to direct all such to dispense exactly what is prescribed under pain of the prescriber's displeasure. If this method is pursued, nearly all druggists may be depended upon to dispense what is prescribed. If the druggist understands that the physician is in earnest and really insists, and that the future patronage of the prescriber depends upon a faithful adherence to his directions in this matter, he can generally be depended upon, if his character is known. But if the physician does not take this decided stand, and implies by his indecision, an absence of a firm determination that what he has prescribed shall be dispensed, it will be taken advantage of in most cases, and some other preparation will be dispensed.

Respectfully, R. W. GARDNER.

gation, he, in 1878, placed upon the market the first stable preparation of Hydriodic Acid that had ever been made, in the form of Gardner's Syrup of Hydriodic Acid. Previous to this time the advantages of hydriodic acid were almost unknown, as the use of it had been attended with such difficulty that very few had found opportunity to experience any favorable effects whatever.

Among these few were Dr. Wylie, of Chester, S. C., and his son, Dr. W. Gill Wylie, the present eminent specialist of New York City. These physicians used an extemporaneous process, similar to that of the U. S. Pharmacopœia of 1860, and after preparation at once mixed it with a heavy syrup, by which means the decomposition was retarded a few hours, and enabled them to partially demonstrate its therapeutic advantages. It was necessary, practically, to prepare it every few hours, to obtain it in proper condition for favorable action. Theoretically, it presented the ideal form of iodine for internal administration, but practically, it was almost useless.

The remarkable results following the use of Gardner's Syrup of Hydriodic Acid, opened a new field in the application of iodine to diseased conditions, as this new remedy possessed none of the objectionable features which had characterized all other forms of iodine, and rendered it possible, for the first time, to administer it at the most favorable period for immediate absorption, half an hour before eating: other forms of iodine were so irritant that they were almost always administered after eating, as by mixing with the food their irritant action was modified. This modification, however, was invariably at the expense of the activity and efficiency of the remedy, as the decomposition by food products changed its chemical condition before it was absorbed.

Gardner's Syrup of Hydriodic Acid was also found to apply to many diseased conditions, in which no form of iodine had previously been known to exercise any remedial action.

It has been shown that it is more efficient, in smaller relative doses, than the alkaline iodides; that it is uniformly indicated in the same conditions in which potassium iodide is employed; that its alterative and sorbefacient action is such that it has been found superior to iodide of potassium in the treatment of that most exacting of all tests, cerebral syphilis, and that, too only in ordinary doses, and with absolutely no inconvenience to the patient.

These advantages could not but attract all thoughtful members of the profession, and it soon became a very much esteemed remedy. Its growing reputation, and the dissemination by the writer of its multitudinous applications, culled from the experience of the many eminent medical men who have written enthusiastically upon their experience with Gardner's Syrup, soon called into existence thousands of imitations.

These imitators claimed in every case the same therapeutic value for their products that had been accorded to the original Gardner's

WQG
1899

PREFACE.

The writer has been actively engaged for more than twenty years in an earnest effort to perfect the pharmaceutical condition of certain well-known and highly esteemed articles of the materia medica. He has selected those which have always in the past presented unusual difficulties to the manufacturer, of such a character as to seriously interfere with their therapeutic value, resulting in either whole or partial failure in treatment.

His investigations have included not only the pharmaceutical character of the drug under observation, but its therapeutical applications as well.

He has confined his investigations to a few of the more important remedies, and has endeavored by improving their pharmaceutical condition to render them more efficient and reliable in the treatment of disease.

The drugs which have been especially investigated are Iodine, Phosphorus (particularly the Hypophosphite Salts) and Quinine.

IODINE.

Iodine in all its forms, as administered previous to 1878, was so irritant as to seriously interfere with its free and continued use. Patients taking iodide of potassium or sodium, Lugol's solution, or iodine in any form then administered, were soon brought to a condition of suffering from the action of the remedy, which in many cases compelled its discontinuance long before its desired therapeutical action had been attained.

Hydriodic Acid (Iodide of Hydrogen) had been made officinal in the form of "Solution of Hydriodic Acid" in the U. S. Pharmacopœia of 1860; it was prepared by a faulty process, by double decomposition, was rendered impure by the presence of bi-products, and more important than all, decomposed almost at once after its preparation.

This was such a fatal objection, that it forbade its use, as it could scarcely ever be obtained in a fit condition for administration. The decomposition consisted in the oxidation of the combined hydrogen into water, and the consequent freeing of iodine, which passed into solution in the remaining undecomposed solution of hydriodic acid.

This change began as soon as the preparation was made, and steadily progressed, changing the solution of hydriodic acid into a solution of free iodine in hydriodic acid, rendering it so irritant that it could not be tolerated by patients.

As this preparation had proven worthless, both pharmaceutically and therapeutically, it was expunged from the U. S. Pharmacopœia of 1870, and no substitute was suggested.

Thus the remedy had been abandoned and had become obsolete, when the writer undertook some experiments with a view of preventing the decomposition which had been its bane. After much investi-

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16 OZ.

8 OZ.

4 OZ.

GARDNER'S
SYRUP OF HYDRIODIC ACID.

THERAPEUTICAL INDICATIONS

WITH

CLINICAL DATA.

EDITED BY

R. W. GARDNER, Pharmaceutical Chemist.

SIXTEENTH EDITION.

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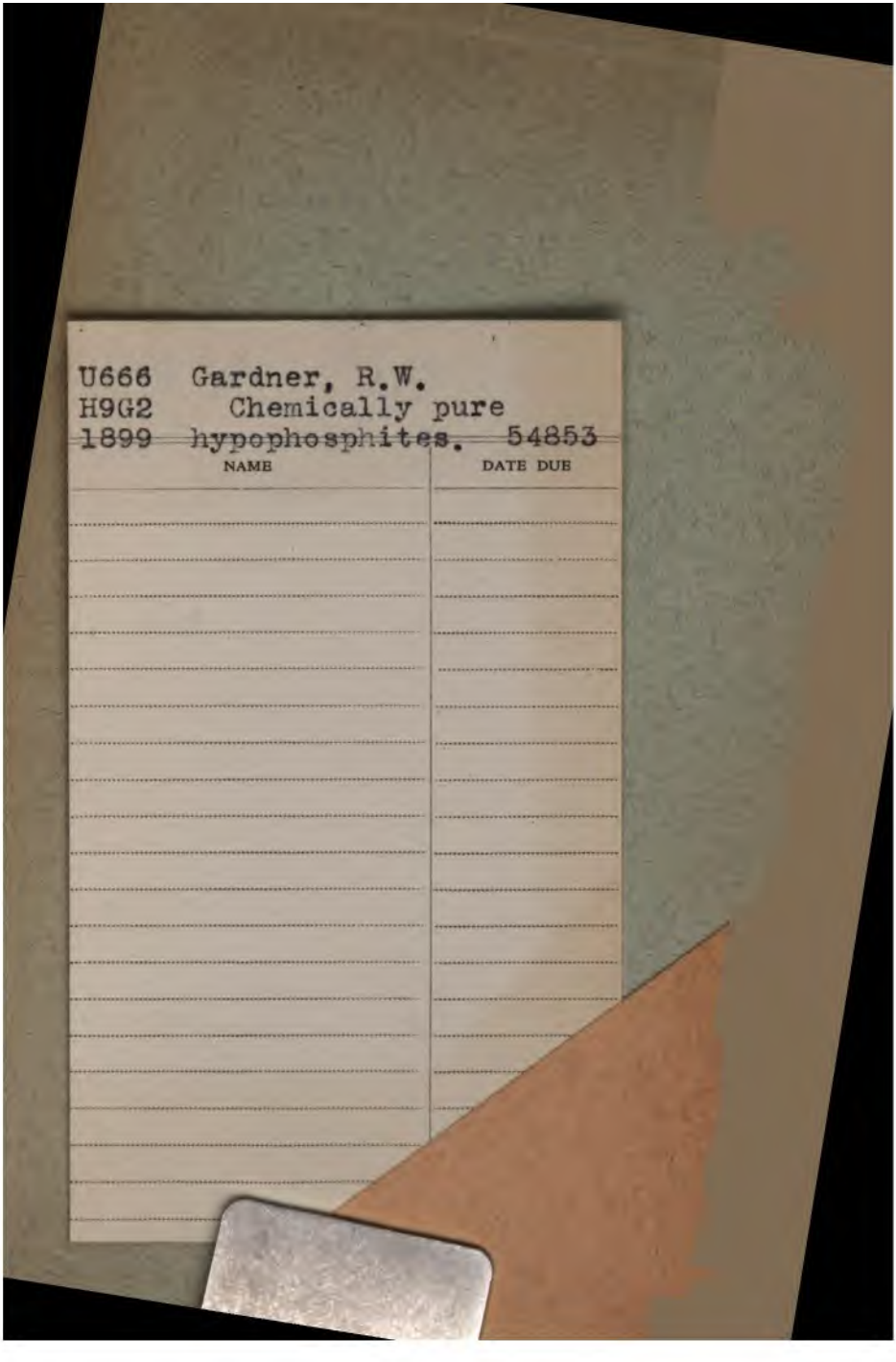
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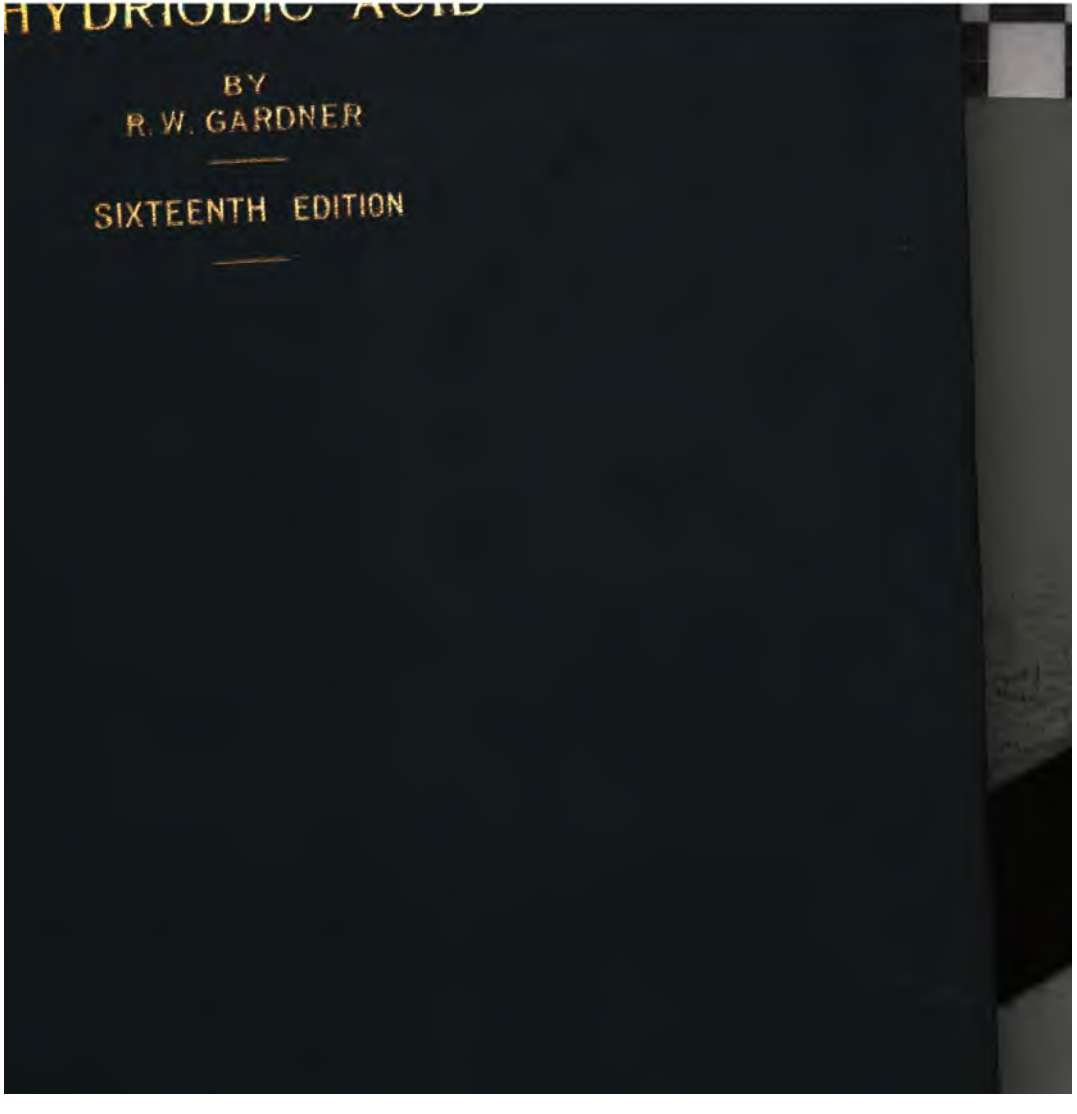
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